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INDUSTRIAL GEOGRAPHY PRIMERS.

G. PHILLIPS BEVAN, F.G.S.

FRANCE

Errata.

P. 3, line 14, for "east," read "west."
8, lines 15, 16, read "rich *in* ores of iron."
15, line 4, after "treasures," insert "(except coal)."
31, line 11, for "rare," read "care."
32, line 30, for "emigration," read "migration."

INDUSTRIAL GEOGRAPHY

OF

FRANCE

Printed by C. Green & Son, 178, Strand.

PRIMER

OF THE

INDUSTRIAL GEOGRAPHY

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FRANCE

BY

G. PHILLIPS BEVAN, F.G.S., F.S.S.
ETC.

LONDON
W. SWAN SONNENSCHEIN & ALLEN
PATERNOSTER SQUARE

1880

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INDUSTRIAL GEOGRAPHY

FRANCE

CHAPTER I.—MOUNTAINS, WATERWAYS AND CLIMATE

FRANCE ranks sixth among the countries of Europe as regards size, those which exceed it being Russia, Turkey, Sweden and Norway, Austria and Hungary, and Germany. Taking it altogether, it is a most beautiful and varied country, possessing a long coast-line with valuable harbours, many fine mountain ranges, noble rivers and fertile plains, together with remarkable diversities of climate and production. It is by nature one of the most favoured lands in the earth, and completely justifies the passionate love which Frenchmen of all ages have displayed for their native soil.

Its greatest length is north to south, from Dunkirk to the frontier of Spain, a distance of 621 miles, and its greatest breadth west to east, from Cape St. Mathieu in the department of Finistère to Mount Donon in the Vosges, 532 miles. France has a coast-line of 1550 miles, washed on the north-west by the Manche or English Channel, on the west by the Bay of Biscay,

and on the south by the Mediterranean. Its land frontier is a long one, consisting of Belgium and Luxembourg on the north and north-east for 319 miles, of Germany on the east for 208 miles, of Switzerland and Italy on the south-east for 519 miles, and of Spain on the south for 360 miles, making a total of 1406 miles. Distances in France, it must be remembered, are calculated in kilometres, one of which is equal to five-eighths of an English mile, or, more roughly, two kilometres go to one mile and a quarter. Land measure is calculated by the hectare, which is equal to nearly two and a half English acres; and the number of hectares in France is 52,857,675.

From this great extent and the number of mountain ranges, France possesses a great variety of climate, and is enabled to grow crops of very different character. The chief of these mountain ranges are as follows: 1. The Alps, that wonderful system which separates France from Switzerland and Italy, and which is so extensive that it is usually divided into separate groupings. These are, (*a*) the Jura chain, lying between the Rhine and Rhone basins, and in the departments of Ain, Jura and Doubs. Its highest point is the Crêt de la Neige, 5656 feet. (*b*) The Savoy Alps, prominent in which is Mont Blanc, the highest point in Europe, 15,798 feet, though, strictly speaking, this is a Swiss and not a French mountain. (*c*) The Graian Alps, which are found on the south-east of Savoy, and have for their highest point Mount Iseran, 17,741 feet. (*d*) The Cottian Alps, in the departments of Hautes Alpes and Drôme, in which Mount Tabor rises to 10,434 feet. (*e*) The Maritime Alps, running from the latter

to the coast, the highest point being Mount Longet, 10,354 feet. (*f*) The Dauphiny Alps, in the departments of Isère, Hautes Alpes, Basses Alpes and Drôme, the highest point of which is Mount Olan, 13,818 feet.

2. The chain of the Cevennes occupies the country between the Rhone, the Loire and the Garonne basins, its most elevated point being Mount Mezena (Ardêche), 5755 feet. 3. Westward of this chain is the group of the Auvergne Mountains, that celebrated cluster of extinct volcanos, which rises in Puy de Saucy near Clermont to 6189 feet. 4. The Vosges Mountains lie between the Rhine and Moselle, their greatest elevation being the Ballon de Guetwiller, 4481 feet. 5. The Pyrenees run due east from the Mediterranean to the Bay of Biscay, and form the frontier-line between France and Spain. Of this range, the Pic de Maladetta in Haute Garonne rises to 11,167 feet. The smaller groups of hills are comparatively insignificant, consisting of the Plateau of Armorica in Brittany, the hills of Normandy, the Morven Mountains in the department of Nièvre, the Côte d'Or and the Plateau de Langres. These ranges of mountains have a great deal to do with the climate of the country, and are therefore of considerable importance in this respect, apart from the mineral or rock treasures that they may chance to contain.

France may be divided into four climatic groups. 1. The North-western, comprising the district between the Channel, the Loire, the Saône, Mezières, Auxerre, and the Belgian frontier. It is, like England, somewhat cold, wet and foggy, with an average temperature of 51°, and the chief natural productions are cereals

and beetroot for sugar-making. 2. The North-eastern embraces the region between the Rhine, the Côte d'Or, the source of the Saône, and a line drawn between Mezières and Auxerre. It is drier than the last, with an average temperature of 49°, the winters being severe and the summers hot. The cultivation of the vine and agriculture are the characteristic features of this group. 3. The South-western lies between the Loire, the Pyrenees and the Bay of Biscay, and has an average temperature of 55°. The summers are hot and the winters seldom severe. Wine cultivation is again prevalent here, together with flax-growing and breeding of cattle. 4. The South-eastern division lies between the valley of the Saône and the Rhône, from Dijon and Besançon to Viviers, and embraces a portion of the Alps. Much of this division enjoys an almost tropical heat in the summer, and the average temperature is never less than 59°. The typical productions are vines, the silkworm, and the growing of madder. It will thus be seen that, apart from the riches underneath the soil, France possesses great advantages for varied natural products.

She is well off for water communications, possessing fourteen great river basins, although some of them, as the Moselle, Scheldt, Meuse and Rhone, belong also to other countries, and are not exclusively French. The total length of navigable rivers is 4154 miles, of which 1103 belong to the Loire, 845 to the Seine, 829 to the Garonne, 830 to the Rhone, and the rest to the Somme, Charente, Meuse, Orne, Vilaine, Adour and Hérault. The navigable portions of the tributaries of these rivers are included in this calculation, many of

these tributaries being of considerable importance. Some of the rivers, and especially the northern ones, being sluggish in stream, have been canalized, and form part of the extensive canal system of France. This system is about 2961 miles, the chief canals being from Nantes to Brest, the one connecting the Rhine with the Rhone, and also between the Main and the Rhine, the Berry Canal, the Burgundy Canal, the Canal du Midi, &c. The Oise and the Somme, both northern rivers, have canal systems incorporated with them, and it is proposed to very largely increase the existing system, so as to bring the great textile, iron and coal industries of the departments of Nord, Pas de Calais and Somme, in nearer connection with the metropolis.

CHAPTER II.—COAL AND IRON

FRANCE cannot be said to be a great coal-mining country, and certainly not when compared with her smaller neighbours, England and Belgium. She possesses, however, some very valuable coal basins (*terrains houilliers*), producing annually between 16 and 17 million tons of coal. Considering the great size of the country, this is but a small amount, and consequently we find that France has to import coal very largely from Great Britain, Belgium and Germany. There are altogether about seventeen principal coal basins, some of good size and containing many beds, others small and unproductive.

1. The Northern coal-field is the largest and most important, and is situated in the departments of Nord and Pas de Calais, being really a continuation of the coal-field of Belgium and part of Prussia. The French coal-fields differ from the English ones, in not being split up into a great many separate properties, but are owned and worked by a few very rich and powerful Companies. For instance, the Anzin Company works a coal property of 60,000 acres, more than eighteen miles long and six broad, and employs in this vast workshop no less than 15,000 men; while the Aniche Company, the next largest, works a property of 30,000 acres. The principal colliery towns of the Northern field are Valenciennes, Lens, Somain, Bethune and Douai. The production of the basin is between six and seven million tons annually, the coal being of three kinds, bituminous or free-burning, anthracite or stone coal (used for malting and brewing), and smith's coal for making coke.

2. The Loire coal basin, next in size to that of the Nord, is situated in the departments of Rhône and Loire, and particularly in the neighbourhood of St. Etienne and Rive de Gier, where are some very extensive collieries. The yield, however, is not nearly as great as that of the Nord, varying from three to four million tons.

3. The Burgundy coal-field lies in the department of Saône and Loire, between the towns of Autun and Charolles. The chief colliery localities are Epinac, Blanzy and Creusot, where are also the celebrated iron-works of that name. The annual production is seldom over a million tons.

4. The Central basin is in the department of Allier, and the principal colliery places in it are Commentry and Bezeret, the yield being between 800,000 and 900,000 tons. The coals are of rather inferior quality, although useful for iron-making.

5. The Aveyron basin lies in the department of Aveyron, Decazeville being the chief centre of supply. The coal-seams are unusually thick here, but the yield is never much more than 600,000 tons.

6. The Alais basin is situated in the department of Gard, and has large collieries at Terre-Noire and Besseges. The production is about one and a half million tons.

The other coal basins, which are all much smaller in extent and importance than those just named, are Brassac in Haute Loire, Ahun in Creuzet, Ronchamp in Haute Saône, Carmeux in Tarn, Graissessac in Hérault, Drac in Isère, &c. As before stated, France consumes about seven million tons of coal more than she possesses, and she therefore imports about three million tons from Great Britain, and the remainder from Belgium and Germany. The English coal arrives at the ports of Calais, Dunkirk, Cherbourg, Havre, Dieppe, Nantes, Honfleur and Bordeaux. The German collieries at Saärbruck supply most of the eastern departments, such as Marne, Haute Marne, Meurthe et Moselle, where the iron trade is met with, and to which they are nearest. As compared with England, coal-mining in France is carried on with just as much scientific completeness and attention to care of life; but the coal is not obtained so cheaply in France, partly from the nature of the beds, and partly perhaps

from a little less aptitude for the work than the English collier possesses.

The iron and steel trade of France is one of the most important industries which she possesses, and one in which she takes high rank among the iron-making countries of the world. France produces annually a large quantity of iron ore (*mineral de fer*); though the manufacture of Bessemer steel has so very much increased of late years, that, even with her own supplies and those from her Algerian colony, she cannot obtain sufficient without importing from other countries. The majority of the French ores, which consist of brown and red hematite, spathose, granular and oolitic ores, are scattered over the country pretty equally, the Pyrenees and other mountain ranges being tolerably rich ores of iron. There are, however, scarcely any of the coal-measure or clay iron-stones, and in this respect France contrasts strangely with England. *Brown hematites* are found, tolerably pure and free from phosphorus (which is the bane of all iron-masters), at Guillot and Taponet, on the borders of the departments of Charente and Dordogne; at Rancié in Arriège, where they are rich in iron and manganese; at Fillols and Sahorre, near Prades, in the Eastern Pyrenees; and also in the departments of Basses Pyrenees and Aube. These latter might be much more extensively worked than they are, if the mines were not situated in such remote districts, communication with which is very difficult.

The *spathose* ores are found at Allevard, in the department of Isère, where is a very extensive bed of these valuable deposits; in the adjoining department

of Savoy, on the slopes of the Alps; at Mount Canigou, in the Eastern Pyrenees; and at Bidassoa, in the Basses Pyrenees, on the Spanish frontier. The *red hematites* are worked at Privas and La Voulte, in the department of Ardêche, and also in that of Aveyron; but they are not nearly so rich or valuable as the ores of the same kind in Cumberland and Lancashire. The *granular* ores, which contain a considerable percentage of iron, are situated in the departments of Doubs, Saône (formerly part of the old province of Franch Comté), Cher and Meuse, where they are worked at Ancerville. These ores have been in use much longer than the others, having been worked in the early days of the charcoal iron trade.

The *oolitic* ores are the most extensive in the country, the deposits extending from the adjoining state of Luxembourg and the German province of Alsace-Lorraine, as far as Nancy in the department of Meurthe et Moselle. The same kind of ores are worked also at Mazaney in Saône et Loire, to the amount of about 200,000 tons per annum, for the benefit of the Creusot ironworks; and, to a much smaller extent, at Mondalzac in Aveyron, at Avelas in the department of Gard, and at St. Villeboix not far from Aix. There are also a few beds of hydrated hematites, something like the Northamptonshire ores, in the Pas de Calais and Brittany. The total annual yield of French iron ores of all kinds is fluctuating, and varies from two to four million tons; and as this is not enough to supply the increasing trade of iron and steel making, the deficiency has to be made up from Belgium, Italy and Spain.

The geographical localities of this great industry to a certain extent correspond with those of coal-mining, though not altogether. The French iron trade differs from the English in a very important particular, viz. that in the former, iron is still smelted occasionally by the aid of charcoal fuel, whereas in England there is only one charcoal furnace in existence. Still, even in France, the charcoal iron manufacture is dying out, and coal or coke furnaces are becoming more universally used. The iron-work districts may be thus grouped:

1. The Nord group, which may be subdivided into those of the Sambre, the Scheldt and the Boulonnaise. The principal iron-works of the district are Maubeuge, Hautmont, Denain, Anzin and Marquise (the latter in the Pas de Calais, between Calais and Boulogne).

2. The Meurthe et Moselle group, in the department of that name, Pont-a-Mousson and Frouard being the chief industrial centres.

3. The Champagne group, situated in the departments of Ardennes (at Longwy), Meuse, Marne and Haute Marne. These works are all noted for special castings for moulding and pottery.

4. The Franch Comté group, unimportant, and principally consisting of charcoal furnaces. They are found in Doubs, Haute Saône and Jura.

5. The Central group, in the departments of Nièvre, Cher and Allier, of which one iron and steel work at least, that of Commentry, is of importance and well known in the metallurgical world.

6. The Aveyron group possesses only a few works of no great size, such as Decazeville and Aubin.

7. The Loire and Rhone group is the largest in France, and contains the finest and most extensive iron and steel work in the country, that of Creusot, which has had an extraordinary development within the present half-century. Forty years ago it was a very small place, and hardly known a few miles away from it, whereas now it is a busy town of 25,000 inhabitants, all employed in the one establishment. It contains 13 blast furnaces and 98 puddling furnaces, producing 190,000 tons of pig-iron every year, besides 50,000 tons of steel rails, 20,000 tons of iron rails, and 100 locomotives. With the exception, indeed, of the great German works of Herr Krupp at Essen, the Creusot are the largest iron-works in the world carried on by one proprietor. In the same group as this monster iron factory are the Terre Noire works, near St. Etienne, department of Loire, another celebrated establishment, together with those of La Voulte in Ardêche, and Besseges in Gard.

8. The Moselle group contains some very large iron-works at Tamaille and Hayange. A portion of the iron industry in this direction was lost to France after the Franco-German war by the cession to Germany of Alsace-Lorraine, and it is a fact worth mention that one of the most sanguinary fights of the war took place in the rolling-mills of the iron-works just mentioned. In addition to this group, there are a few unimportant works in the department of Eure, also in the Landes, and in Savoy and Dauphiny. The average annual production of pig-iron (*fer de fonte*) in France is about one-and-a-half million tons, of which 100,000 are made with charcoal, 75,000 with mixed

Loire Inférieure, Morbihan, Vendée, Bouches du Rhône, Gard, Hérault, Aude and Pyrénées Orientales, averaging in extent about 50,000 acres, and yielding from half a million to 700,000 tons of salt per annum. Another hundred thousand is obtained from the saline springs at the various baths in the Pyrenees, Arriège, Doubs, Meurthe and Moselle, at which a considerable trade is carried on by salt evaporating, as well as by benefiting the invalids.

France is naturally rich in various kinds of rocks, possessing, as she does, such a diversified geological area. GRANITE (*granit*) is found in the Alps, the Vosges Mountains, the Lyonnais ranges, Auvergne and the Cevennes Mountains; SYENITE, a hard and beautiful stone, capable of taking an excellent polish, in many of the same ranges, together with porphyry and serpentine, all these rocks being of plutonic or eruptive character. SLATES (*ardoises*) are quarried to a considerable extent at Angers, near Cherbourg, and in the Ardennes. MARBLE (*marbre*) is very plentiful, existing in at least 40 departments, and some of the quarries yielding exquisite black marble of carboniferous age. FREESTONE (*pierre de taille*) is found at Caen and other places in Manche and Calvados; ALABASTER in Yonne, the Pyrenees, Seine et Marne, and at Montmartre, a suburb of Paris. PAVING-STONES (*pierre de pavé*) are raised in the Forest of Fontainebleau and in Seine et Oise; MILLSTONES (*meule de moulin*), principally at Ferté-sous-Jouarre (Seine et Marne), from whence great numbers are exported to England; POTTER'S CLAY (*argile*), in Seine et Marne and at Beauvais (Oise). The number of quarries in France is estimated at

24,000, giving employment to about 90,000 workmen, and yielding various kinds of stone and clay to the amount of 41 million francs, a sum greatly in excess of her mineral treasures underneath the surface of the ground.

Chapter IV.—Hardwares, Metal and Watch Trades

Although a considerable amount of cutlery and hardwares are made in France, there is no branch of them which bears any world-wide reputation, like the goods of Sheffield and Birmingham. The principal places for the manufacture of cutlery (*coutellerie*) are Thiers (Puy de Dôme), Langres and Nogent (Haute Marne), Châtellerault (Vienne) and Paris. About 20,000 people are occupied at Thiers in making knives of somewhat common quality, scissors and razors. Langres and Nogent are more occupied with fine cutlery for the Paris market, a proportion of the inhabitants working in factories, while the most skilled carry on their labour at home with their families. Nogent cutlery has the best name throughout France. Châtellerault is famous for its table-knives and for the excellence of its forgings. It has also a manufactory of arms of rather ancient date, though of late years it has not been in a very flourishing condition. Paris, though nominally the centre of the cutlery trade, in reality is only the market to which these various towns send their wares, except in the case of ornamental and artistic cutlery,

for which greater facilities exist in Paris than in the provinces.

Hardwares (*quincaillerie*) are produced in several towns, such as St. Etienne (Loire), which is specially noted for the excellence of its files, Chambon (Loire), Firminy (Loire), Lille (Nord), which possesses the largest and best machine-shops in France, Beaucourt (Haute Saône), where are large manufactories for turning out nuts, bolts, screws, padlocks. &c., Vesoul (Haute Saône), which contains brass-works, and Meaux (Seine et Marne), engaged principally in agricultural machinery. Although, as before stated, there is no cutlery to compare with Sheffield, the production of edge tools has very much increased of late years, both in quantity and quality.

There is, however, one branch of metal work in which France, and particularly Paris, stands unrivalled, and that is the manufacture of gold and silver ornaments (*orfèvrerie*). Ever since the seventh century, the art of gold and silver chasing has been followed in France, and the craftsmen formed one of the most powerful of Parisian guilds or corporations. There are two distinct classes of orfévrerie, one comprising table plate generally, whether it be chased and hammered or electro-plate, the other dealing only with church and religious decorative ornaments. Paris and Lyons are the chief, and almost the only seats of this trade, the former city containing 70 goldsmiths making table services, and employing 400 artizans; 17 gold-spoon makers, with 250 workmen; 150 producing German silver and copper-gilt plate, with 1200 men; and about 433 establishments for polishing and burnishing, with

1500. The following estimate shows the great value and importance of the trade, the annual production being:

Large services of plate .	18,000,000	francs.
Small sets and pieces .	5,000,000	„
Silver dishes and plates	10,000,000	„
Electro and gilt . . .	17,000,000	„
Total	50,000,000	„

Another class of metal work which is particularly a French speciality is that of bronze, which has attained a high artistic perfection and employs a great number of people. The base of the manufacture is either copper, zinc, tin or lead, and upwards of 8000 artizans are occupied in the foundries where the articles are turned out, and in the subsequent delicate operations of the hammer and the chisel. The production of bronze ornamental work is valued at 80 million francs a year. Besides this, there is a considerable trade in what is known as imitation bronze, the basis being zinc from the Vieille Montagne mines in Belgium, afterwards bronzed by galvanic processes. Iron is largely cast in the Champagne district, where the ores are specially adaptable to fine castings, and is afterwards oxydized or bronzed, so that a large amount of ornamental work is produced in this way.

Jewellery (*bijouterie*) employs a great number of hands, as anybody must imagine who has ever walked through the boulevards of Paris or the galleries of the Palais Nationale, in which every second shop is that of a bijoutier. For all this vast production, the greater part of

the French jewellery, whether real or imitation, is made, not in factories, as it is in Birmingham, but at home. The varieties of the jewellery trade are numerous, the chief being that of *or doublé*, in which by great pressure a very minute plate of gold and a thicker one of copper are welded together at a high temperature, the combination being susceptible of any amount of manipulation. Other branches are those of gilt, steel and mourning jewellery; while the art of producing imitation pearls is carried to such perfection, that it is difficult to tell them from real ones.

One of the most important and characteristic manufactures in France is that of watch and clock making (*horologerie*), which is carried to a very great extent, and employs upwards of 60,000 persons. As an industry, it comprises three very distinct classes of horological work, in the shape of large clocks, watches, and special time-pieces, alarums, &c. Paris is the chief centre for all kinds of mechanical clocks and toys, chronometers and telegraphic apparatus; the town of St. Nicholas d'Aliermont, near Dieppe, is almost entirely occupied with making pendulums for clocks and alarums; Cluses (Haute Saône) has a large factory where watch-work, such as pinions, &c., is made, and also an horological school maintained by the Government. Besançon (Doubs) may be considered the head-quarters of the watch trade (originally founded here by Swiss refugees), 16,000 hands being employed in the town, and upwards of 40,000 in the whole department of Doubs. Watch movements are made at Montbéliard (Haute Saône) and its neighbourhood; clock weights and bells for striking at Morez (Jura); watch keys at

Loire (Haute Saônė), and watch glasses at Trois Fontaines (Meurthe et Moselle). It will thus be seen that the various sections of the French watch trade are curiously localized. The industry of Besançon alone comprises 300 or 400 distinct parts, most of the mechanical portions of the watch being made in the rough, to be afterwards put into exact shape by more skilled workmen at Besançon, Paris or Geneva. All along the Swiss frontier, great numbers of workers are employed on these rough sketches, either singly or in small workshops; and in fact the peasant divides his time between the labours of the field and watchmaking, thus earning from two to three francs a day. For many years the Swiss makers supplied France with watches; but of late the reverse of this has taken place, and Besançon not only supplies the French, but also the Swiss themselves. The export watch trade from Switzerland to France has fallen off from 4,000,000 francs per annum to 1,400,000; while the French export to Switzerland has, on the other hand, risen from 330,000 francs to 1,600,000; and in point of fact the watch-work of Besançon is so good, that many Geneva makers put their movements into Swiss cases. But both French and Swiss watchmakers are beginning to feel the wholesale production of watches by machinery in America, and the next few years may see great changes in this respect. At present the number of gold watches annually made in France is estimated at 145,000, and of silver ones at 300,000.

Chapter V.—Pottery, Glass and Paper

Pottery, in its various forms, is a manufacture that has assumed considerable importance of late years, and is divided into the four distinct classes of porcelain (fine or opaque), earthenware or *faïence*, stoneware and terra cotta. The principal locality for fine porcelain is Limoges, in the department of Haute Vienne, the centre of a district known as the Limousin, and the china here made is in great favour both in England and elsewhere. There are in this neighbourhood about 45 potteries engaged in this ware, producing annually some 12 million francs' worth, and employing 6000 hands. Fine porcelain is also made in the departments of Creuse, Cher, Allier, Nord, Nièvre; nor must we forget the world-famed porcelain factory of Sèvres near Paris, the make of which commands the very highest prices. Opaque porcelain is principally made at Bordeaux, at Beauvais (Oise) and Gien, department of Loiret. Earthenware (*faïence*) of various degrees of fineness and beauty, is produced in a great many parts of the country, such as the towns of Toul, Longwy and Nancy (Meurthe et Moselle), Angoulême (Charente), Choisey-le-Roi and Sceaux (Seine), Nevers (Nièvre) and Quimper (Finistère); and stoneware at Cateau (Nord), Auneuil (Oise), Roanne (Loire), and in the department of Drôme. The annual value of the production is 43½ million francs, and of earthenware 14 million francs. The kinds of porcelain which have the greatest market in England are Sèvres, Limoges and Gien. China clay or kaolin, one of the

most necessary ingredients in the porcelain manufacture, is not so localized as it is in Cornwall, but is found more or less in the departments of Haute Vienne, Indre, Drôme, Dordogne, Basses Pyrénées, Allier, Nievre and Corréze.

About 20,000 workpeople are employed in the glass trade, which has shown a most marked development of late years, both in increase of production and improvement in quality. The first great glass work (*verrerie*) established in France was that of St. Gobain (Aisne), set on foot by Colbert in the 17th century, but there are now many large and important factories in the departments of Nord, Seine, Meurthe et Moselle, Rhône and Loire ; Paris, of course, being the grand market to which the majority of the production finds its way. As in watchmaking, different localities have specialities of glass ware, of which, in actual value, that of bottles stands first. There are from 80 to 90 of these establishments (the oldest of them being that of Quinquengrogne, Aisne, founded in 1291), scattered about at Douai, Fresnes, Trèlon (Nord), Monceau-les-Mines, Epinac and Chagny (Saône et Loire), Vauxrot and Hirson (Aisne), Rive de Gier (Loire), Maison Rouges (Ardennes) and other places. The most celebrated establishments for mirrors are St. Gobain and Cirey, but they are also made at Jeumont and Aniche (Nord), and at St. Denis (Seine). Crystalline and decorative table glass is made to perfection at Baccarat and Croismare (Meurthe et Moselle), Clairey (Vosges), Epau (Nièvre), Pantin, Clichy, St. Joseph du Bourguet and Aubervilliers, all in the neighbourhood of Paris. Window glass is chiefly made in Nord, Seine Infé-

rieure, Aveyron, Loire, Haute Loire and Allier; and *gobeleterie*, or useful glass for mineral waters and chemicals, principally in Meurthe et Moselle. Sarrebourg was the great centre of this trade, but since the loss of Alsace to France, it has been transferred to Lunéville. The following table shows what a large trade is carried on annually in these branches:

	PRODUCTION	EXPORT
Crystal glass .	11,000,000 francs.	4,000,000
Table glass . .	14,000,000 „	8,000,000
Mirrors . . .	25,000,000 „	8,000,000
Window glass .	15,000,000 „	3,000,000
Bottles . . .	40,000,000 „	12,000,000
Total .	105,000,000 „	35,000,000

The paper trade, though extensive and having a production exceeding 100,000,000 francs a year, bears no proportion to that of England, and appears to be somewhat declining, to judge from the number of people employed, viz. 34,000 in 1867, who had decreased in 1875 to 26,178, though this decrease might have partially arisen from improvements in machinery. France has a high reputation for her fancy papers (*papiers de luxe*), but there is no very large consumption of ordinary paper amongst the masses, as there is with us. The most productive departments in the paper trade are Isère, Charente, Seine et Oise, Seine et Marne and Pas de Calais, there being large mills at Grenoble (Isère), Angoulême (Charente), Annonay (Ardèche), Jouy-sur-Morin (Seine et Marne).

Bookbinding (*reliure*) employs over 10,000 hands,

but the trade is very localized. Ornamental and artistic binding, which has a very high reputation, is almost entirely done at Paris, where the great publishing houses are; but the bulk of the more ordinary binding is performed at Tours, Limoges, Rouen, Rennes and Lille. Next to Paris, more books are published at Tours than in any city in France, it being the head-quarters of the celebrated publishing house of Mame et fils.

Chapter VI.—Textile Trades

France has of late years become a very large textile manufacturing country; that is to say, she has very greatly improved her machinery and general quality of work, and is, in certain respects, no inconsiderable rival of Great Britain. The textile trades of the country consist of woollens, cotton, hemp, flax and linen, lace and silk, in the latter of which France has no rival.

The woollen (*laine*) trade is not concentrated in one or two departments like it is in Yorkshire, but is scattered about in different localities. The chief woollen towns in France are Elbœuf (Seine Inférieure), Louviers (Eure) and Sedan (Ardennes), the latter place being noted for its milled and fulled cloths. At Elbœuf about 14,000 hands are employed in the cloth trade, the manufactories here producing the best cloth in France, and the dyers of Elbœuf being particularly celebrated. Roubaix (Nord) is known for its

fancy goods, in the making of which a great number of hand-loom weavers are employed. Both Roubaix and the adjoining town of Turcoing are celebrated for their woollen hosiery. Rheims (Marne) is one of the chief seats of the worsted trade, in which some 60,000 persons are employed. Vienne (Isère) is best known for its low-priced woollen goods mixed with cotton, in imitation of our Huddersfield goods; Vabre (Tarn) for its serges; Lodève (Hérault) for its army cloth, of which there are 15 factories, occupying 4000 hands. As regards the general localities of the woollen trade, the departments of Nord, Eure, Ardennes, Seine Inférieure, Isère and Marne are those in which the bulk of the manufacture is carried on, Nord and Marne being specially noted for worsted, Seine Inférieure and Ardennes for cloth, Calvados and Aisne for spinning, Aude for woollen drapery, Isère for mixed goods, Hérault for army cloth, and Bouches du Rhône for woolwashing and carding. There are about 3 million spindles in the French woollen trade, with an annual production of about 36 million pounds of woollen yarn. France exports at least 360 million francs' worth yearly in the shape of woollen cloths to England, Italy, Spain, Belgium, Germany, Turkey, Chili, the Argentine Confederation and the United States; woollen hosiery to Turkey and Switzerland; carpets to England and Belgium; and merinos to England, Turkey, Spain and America. The imports of woollen goods from England and other countries are declining, owing to the great advances and improvements made by the French in this branch of textiles.

The COTTON (*coton*) trade does not rank quite so high as the woollen in importance, though it gives employment to more hands. The trade, however, is not so much scattered, but is rather more concentrated, being principally carried on in those departments which formed the ancient province of Normandy. Before the Franco-German war in 1870, France possessed a very considerable portion of her cotton manufacture at Mulhouse in Alsace; and when she lost this at the close of the war, a good many of the manufacturers in that province, unwilling to become German subjects, crossed the frontier, settled in the Vosges, and established the cotton trade there. The principal cotton towns are Rouen, Elbœuf and Yvetôt, in the department of Seine Inférieure; Epinal, St. Dié and Remiremont, in Vosges; Lille, Roubaix, Turcoing and Valenciennes, in Nord; Evreux and Gisors in Eure; Roanne in Loire; Tarare and Amplepuis in Rhône; Nancy in Meurthe et Moselle; Bar-le-Duc in Meuse; Flers in Orne; St. Quentin in Aisne; and Amiens in Somme.

Rouen (Seine Inférieure), with its suburbs of Sotteville and Deville, may be said to be the chief cotton city of France, in which over 150,000 people are engaged in producing calicos and printed goods. It may be mentioned that the hosiery trade was originally started in Rouen by a brother of Lee, the Nottinghamshire stocking-frame inventor in the reign of Queen Elizabeth, and ever since that time it has flourished, a vast number of cotton articles being made here under the general name of *rouennerie*. Lille (Nord) is another great cotton town, in which vast quantities of thread

are produced; and the same may be said of Flers (Orne), though it is not nearly such a large place. Tarare (Rhône) is celebrated for its white muslins, cambrics and embroideries; Nancy (Meurthe et Moselle) is also known for its embroidery trade,. and Roanne (Loire) for ladies' dresses. About 68,000 people are engaged in the cotton trade of France, the number of spindles being 4,610,000. This is, of course, a very small number when compared with England, which possesses 39½ millions, and employs nearly half a millon of operatives. The amount of raw cotton imported depends very much on the state of the trade, which necessarily fluctuates; but within the last few years it has varied from 130 to 155 million kilogrammes, or about 352,000,000 lbs. Since the cession of Alsace to Germany, the requirements of the trade have naturally not been so great. The imports of cotton goods are also very considerable, principally from England, Belgium and Germany, while the exports have been rather falling off of late years; but notwithstanding the difficulties under which the French cotton trade labours, English manufacturers consider that there has been a constant advance and improvement.

The industries of FLAX, HEMP and JUTE (*lin, chanvre et jute*) are much more limited and more localized than the two previous classes of textiles. In fact, the flax and linen trades are chiefly found in the old province of Normandy, and especially in the departments of Calvados and Eure; the hemp trade in Anjou, and that of jute in Picardy and Flanders. These respective industries are not altogether limited to these districts, but so much so as to be charac-

teristic of them. The chief industrial towns for these textiles are Lille, Douai, Cambrai, Armentières, Dunkirk, Valenciennes, Comines, Roubaix and Turcoing (all in the department of Nord), Amiens and Abbeville (Somme), Alençon (Orne), Mans (Sarthe), Angers (Maine et Loire), St. Dié (Vosges), Lisieux (Calvados), Loudeac (Côte du Nord) and Landerneau (Finistère).

Dunkirk is the head-quarters of the French jute trade, and has been of recent years a very busy and important place, several Scotch mill-owners having transplanted hither their jute mills from Dundee, as they find that labour and the general expenses of manufacturing are much less at Dunkirk. Altogether there are in France some 226 flax and linen factories, having about 700,000 spindles and 23,000 power-looms; the whole trade employs from 60,000 to 63,000 people. In France there is grown a fair quantity of flax, upwards of 75,890 hectares or nearly 191,725 acres being planted with this crop in 1878. Still this is not enough for the consumption of the trade, so that a great deal is imported from Belgium, Russia, Algeria, and in the shape of yarn from England. These imports in 1877 were of the value of 97 millions of francs. As with her cotton, France manufactures linen goods more for her home consumption than for exporting, although a considerable quantity of cambric lawn and other linens are annually sent to England and elsewhere. It is interesting to remember that the town of Cambrai originally gave the name to *cambric*, although of late years it has been more celebrated for its beetroot growing and sugar making than for its textile trade.

The preceding industries, it will be seen, are located

more in the north of France than in other parts; but that of SILK (*soie*) is marked by just the opposite, it having been from its earliest establishment in 1305 an industry of the south-east. It may indeed be called *the* special textile of France; for whereas cotton, wool and linen are at the best rather fluctuating, and not on a scale to compare with Great Britain, silk, on the contrary, has its home here, and France in this respect excels all the world. The old kings of France gave great encouragement to the trade, and in Henry IV.'s reign (17th century) the whole of the garden of the palace of the Tuileries was turned into a great feeding-ground for silkworms, containing 20,000 mulberry trees. The silk trade in France is divided into several sections, all of which are quite different in their processes. First of all, is the "sericulture," or growing of silk, which is carried on through the cultivation of silkworms (*magnanerie*) in at least 22 of the southern departments. There are between 200,500 and 300,000 silk cultivators in France, most of them on a small scale, it being a very profitable occupation, and requiring but little beyond personal management. The departments of Gard, Ardêche, Drôme and Vaucluse are the four most important in this branch of industry, the total average French production of cocoons being about 11 million kilogrammes. It is, however, a very uncertain yield, silkworms being liable to diseases which destroy them in incredible numbers. The annual home supply falls very far short of what is required for the trade; and almost three times as much as is produced in France is imported, principally from China, Japan, Persia, Georgia, Italy, Spain and Turkey.

The preparation of the raw silk in the shape of winding (*devidage*) and throwing (*moulinage*), is another branch of the trade which occupies a great many women and children. There are about 500 of these establishments, existing, naturally enough, in the same departments where the silk cultivation is carried on, as also in Isère, Ain and Hérault. The principal localities of these industries are Flaviac, Privas, Annonay, Cheylard and Vals, in Ardêche; Valence, Dieule-fit and Montélimart, in Drôme; St. Jean du Gard, Alais and Uzès, in Gard; St. Rambert (Ain), Avignon (Vaucluse), Montauban (Tarn et Garonne). Besides the occupation of producing silk yarn, there is a considerable industry in silk waste, the workers in which are employed in carding and spinning those parts of the cocoon which are difficult to reel, together with the waste ends that result from the reeling, and that would be good for nothing but for this manipulation. There are 15 of these waste spinning establishments, with 75,000 spindles, most of them in the neighbourhood of St. Rambert (Ain) and Fismes (Marne), besides others in the departments of Ain and Hautes Alpes, which devote themselves solely to carding the silk waste.

The chief celebrity of France, however, is in the subsequent branch of the silk industry, that which deals with the products of the loom, and in which, both for beauty of design and excellence of workmanship, the French weavers are unrivalled. But before the silk is sent to the loom, it has to be dyed, and this is chiefly carried on in the city of Lyons and at St. Chamond (Loire). Lyons and Tarare, in the depart-

ment of Rhône, are the chief centres of the silk goods or manufactured silk trade; St. Etienne (Loire) is the head-quarters of the ribbon, velvet and trimming trades; Paris, of silk stuffs; while Amilly (Loiret) and Ferté Alais (Seine et Oise), are principally occupied with floss silk; Chambéry (Savoy), with silk gauze; Roubaix (Nord) and Tours (Indre et Loire), with silk sewing thread. It will thus be seen that, though widely spread, the silk trade is most distinctly localized in all its branches.

The very large population (325,000) of Lyons is mainly occupied in the silk dyeing and weaving. It contains 120,000 looms in the city and suburbs, producing on the average about 460 millions' worth of francs in its different silks, such as "foulards," crapes, tulles, silk velvets, taffetas, "failles," embroidered silks and satins, silk stuffs mixed with cotton or wool, moires antiques, gauzes and grenadines, scarfs, shawls, lute-strings, poplins, silk plush, church furniture, &c. Out of this vast production, two-thirds are exported to all parts of the globe, east, west, north and south, for Lyons is by common consent the market of the world in this one particular. Silk ribbons are chiefly made at St. Etienne (Loire), and the exports of these vary from 50 to 80 millions' worth of francs. Of late years, there has been great stagnation, a good deal arising from over-production and consequent glutting of the foreign markets with silks, but this, it is to be hoped, is but temporary. Great Britain takes annually about £7,000,000 of silk stuffs and ribbons from France.

Chapter VII.—Textiles and Clothing

Amongst the more important textile industries, that of carpets (*tapisserie*) and tapestries hold a high place. For ordinary wear, the French seldom use carpets in their houses, but prefer polished floors and "parquets," so that there is not the demand in France for cheap, comfortable carpets and druggets that there is in England. But, on the other hand, they are in great request for ornamentation, for *salons* or wall decorations, and we consequently find that the most extreme rare and artistic work has been lavished upon them. In this sense, French carpets must be looked upon more as pictures than articles of furniture. The most beautiful of these carpets is done by needlework in two or three places, viz. the Gobelins factory at Paris, at Beauvais (Oise), and at Aubusson (Creuse.) All these celebrated carpet and tapestry schools were established by Colbert, the Minister of Louis XIV., and have ever since maintained a reputation for artistic work which is world-wide. The Beauvais factory differs from the Gobelins in producing smaller tapestries for furniture and panelling, while the latter is celebrated for its large decorative tapestries for walls. The woofs of the Beauvais canvas are therefore finer and closer than those of the Gobelins; but for the same reason, the time taken in making the Beauvais tapestry is much longer and the expense higher, the cost of a square yard being at the rate of about £90. This industry, although of national celebrity, can scarcely be called of national importance, though there is a considerable trade in the production of machine-

woven carpets at Lyons, Roubaix, Nîmes, Amiens, Tours and Aubusson. The annual value of the carpet trade is estimated at 81 million francs.

Amongst the minor textile industries, that of LACE (*dentelle*) and tulle has always held a high place in France, whether we regard the beauty of the product, or the number of persons who gain a livelihood by making it. There are two kinds of hand lace making, viz. pillow and point lace, the latter being executed entirely by the needle, and of a much more elaborate and costly character than the former. Like the silk trade, that of lace is much localized, there being some eight or nine districts, each producing a characteristic kind of lace. The largest of these industrial populations is found in the departments of Haute Loire, Cantal, Puy de Dôme and Loire, where some 130,000 people are occupied in making what is known as the Puy lace. Mirécourt, in the Vosges, is another important lace district, employing about 25,000 women and girls; and Calvados and most of the towns of the old province of Normandy are celebrated for their lace work. It forms the principal industry at Caen, the population of which is 25,000; at Bayeux (15,000), at Pont l'Evêque (10,000), and other places in the neighbourhood. The lace trade is also vigorous at Arras (Pas de Calais), where the majority of the females earn their livelihood by it, but at Lille it has a good deal declined of late years. Valenciennes used to be celebrated for its lace; but with that curious tendency to emigration which many trades show, it has entirely left that place, and betaken itself to Haazebrouck and the neighbouring village of Bailleul. At Chantilly (Oise)

from 8000 to 9000 hands are still employed, and about the same number at Alençon (Orne), the lace of which place has always been greatly in fashion, under the name of Point d'Alençon. But even here the trade has been so fluctuating, that in 1830 there were not more than 300 persons engaged in it, and the whole value of the manufacture did not exceed 30,000 francs per annum. At the present time, about a quarter of a million of women and young girls earn their living by this branch of textile.

The TULLE trade differs very materially from that of lace in being a mechanical operation carried on in factories, though it is one of very considerable importance, employing nearly 32,000 hands. The chief seat of this industry is Calais, or rather its suburb Pierre-les-Calais, in which the greater part of the population consists of tulle factory workers—the descendants of English lace and tulle makers from Nottingham, who emigrated here some 50 years ago, and thus laid the foundations of one of the most flourishing of French industries. There are from 40 to 50 tulle factories in St. Pierre, which has a curious mixture of French and English inhabitants. The reputation of the work-people stands very high, and their productions are in considerable request, although, as in Nottingham, the lace and tulle trades have frequent times of depression. The other localities where this industry is carried on, are Lyons, St. Quentin (Aisne), Lille, Jonchy and Caudry, all in the department of Nord. The French have not only benefited by the introduction of English artizans, but by that of our machinery as well. A bobbin-net machine, invented by Heathcote, of Not-

tingham, was set up at Valenciennes in 1815, and, in point of fact, most of the French tulle machines are based on English discoveries and improvements. At present there are 1860 bobbin-net machines in use in France, and the trade is a rapidly increasing one.

EMBROIDERY is another branch, employing at least 200,000 women, working either by hand or machine. It includes not only embroidery proper, but also the variety of work called *passementerie*, such as trimmings, fringes, braids, edgings, and the finishings generally of military clothing and decorative furniture. Certain towns have a speciality for this class of work, such as Paris, Lyons, Lille, Douai (Nord), Beauvais (Oise), Toulouse (Haute Garonne), Clermont (Puy de Dôme), Rheims (Marne), Nantes (Loire Inférieure), Angers (Maine et Loire), Tours (Indre et Loire), St. Etienne and St. Chamond (Loire), Nîmes (Gard), &c.

The HOSIERY (*bonneterie*) trade is important, although it cannot boast of any great factory centres, like Leicester, Nottingham or Hawick. At the same time, certain localities are known for the production of certain goods, cotton hosiery being pretty well confined to the towns of Troyes, Romilly and Villemaur (Aube); the woollen hosiery to the Somme towns, such as Amiens, Caix, Abancourt and Rosières; and the silk hosiery to Paris and Lyons. These, however, are not the only places which have a hosiery industry; for there are also Nîmes and Suméne (Gard), Lille and Ohain (Nord), Evreux (Eure), Vitré (Ille et Vilaine), St. Dié (Vosges) and Arras (Pas de Calais), in which a considerable trade is carried on under this head. Paris is the great market to which all the hosiery made in the provinces is sent,

though in itself it contributes largely to the general production. That this is large, is shown by the fact that the annual value of the hosiery trade is estimated at 140 millions of francs. Cotton and woollen hosiery have made the greatest strides, while silk hosiery has been rather stationary for some years past.

Paris is also the head-quarters of the CLOTHING trade, to which an enormous material made up in the country is constantly being forwarded, the reason being that this kind of labour is so much cheaper there than in the capital. The principal localities for the linen branches of clothing are Paris, St. Quentin, Argentan (Orne), St. Omer (Pas de Calais) and Verdun (Meuse); while the bulk of the shirts, drawers and flannel waistcoats, are made in the departments of Seine, Seine Inférieure, Nord, Cher, Indre, and Indre et Loire. The industry is estimated to be worth 150 millions of francs annually, of which about one-third is exported. *Elastic web* of cotton, or cotton and wool mixed, is chiefly made at Rouen, but silk web at St. Etienne and St. Chamond. Over 1200 looms are employed in this material, the annual make being 6 millions' worth of francs. The value of the *corset* trade, which is found in Paris, Lyons, Troyes (Aube) and Bar-le-Duc (Meuse), is placed at 13 millions, while that of collars and ties exceeds 30 millions.

From 8,000 to 10,000 looms are employed in the manufacture of SHAWLS (*châles*), which is restricted to a few places only. Thus shawls woven in Jacquard looms are nearly all made at Lyons, Nîmes (Gard) and Bohain (Aisne); tartan shawls, at Rheims, Hallévin (Nord) and a few other villages in that department;

printed shawls, in the neighbourhood of Paris, such as St. Denis and Puteaux.

The centres of the *glove* (*ganterie*) trade are Paris, Grenoble (Isère), where it is the main feature, Chaumont (Oise), St. Junien (Haute Vienne), Lunéville (Meurthe et Moselle), Niort (Deux Sèvres), where beaver gloves are made, Blois and Vendôme (Loir et Cher), Béziers (Hérault) and Annonay (Ardêche). This latter place is noted for the tanning and preparing of calf and dog skins, of which, together with kid, some 1,500,000 dozen are annually used, of the value of 80 million francs. A great deal of the glove trade is done by hand, and, including the skin preparers and dressers, over 70,000 persons find employment in it. The average number of pairs of gloves turned out every year is over two millions, of which about 30 per cent. are exported, and the rest used at home.

There is no great *button*-making town in France, like Birmingham; but for all that, the trade is an increasing one, and there has been a vast improvement in the production of the various kinds of buttons in silk, pearl, horn, porcelain or corozo nut. Next to Paris, the department of Oise makes more buttons than any other district, though they are produced also in great numbers at Toulouse (Haute Garonne), in the Vosges and in the department of Lot et Garonne, while the little town of Briare (Loiret) is famous for its porcelain buttons. The whole value of the trade in 1830 did not exceed 2 million francs, whereas it is now over 50 millions, employing at least 30,000 people.

READY-MADE CLOTHING (*confections*) gives occupation

to between 80,000 and 90,000 hands, one curious feature of the trade being the polishing up or "renovating" of old clothes, and exporting them to the colonies, to the amount of 8 or 9 millions' worth of francs each year. The hat-making trade (*chapellerie*) is an important branch, whether silk, felt, beaver or straw; while in Paris are extensive manufactories of uniform hats and caps, called "casquettes," for officers in the army and students in the various colleges and polytechnics. Panama hats are made principally in the departments of Meurthe et Moselle and of Vosges; and straw-plaiting is carried on to a great extent in Isère and Tarn et Garonne.

Boot and shoe making is estimated at a production of 640 millions of francs, employing over 200,000 workpeople. It is more of a country trade than a city one, and is a great industry in Toulouse, and the districts of Bellême (Orne), Peneigue and Jupille (Sarthe), Darney (Vosges), Fougéres (Ille et Vilaine), and the department of Puy le Dôme. One extensive firm in Paris employs 1000 hands in the department of Cantal, who yearly turn out 600,000 pairs of *sabots* or clogs.

We must not omit, in dealing with the clothing trades, to mention a singular branch of industry, which has quadrupled within the last ten years, and is becoming extraordinarily large. It is that of female *hair*, of which about 80,000 kilogrammes or 176,000 lbs. are annually shorn from the heads of provincial young women, and sent up to Paris, to be made up by the hairdressers there into head ornaments, in the shape of curls, wigs, frizettes and "postiches," or false hair. It is scarcely credible that the money value of this industry exceeds 30 millions of francs per annum.

Chapter VIII.—Agriculture

We have now taken a brief review of the chief industrial features of France—the coal, iron and metal trades; the hardware, glass and pottery; the textiles and clothing trades. The next point of interest to be considered is the AGRICULTURE of the State, and those industries which contribute more or less to the nourishment of mankind. A large range of subjects is opened up under this head, for it includes not only agriculture pure and simple, but the cultivation of other valuable industrial crops for which France is famous, such as the vine, the olive, the beetroot, and others of this character.

The total area of France may be put down at about 52 million hectares, or, roughly speaking, 130 million acres, which may be divided as follows:

Natural pastures	5	million hectares.
Vineyards	2	,,
Gardens and orchards . .	2	,,
Arable lands	25	,,
Woods	8	,,
Lands and artificial pastures	8	,,
Sundries	2	,,

It must be borne in mind, however, that these figures are very general, and that they are perpetually varying in their relations to each other, even under ordinary circumstances, while sometimes extraordinary ones arise which involve a very serious change. For instance, the figures in connection with the vineyards

have been, within the last three years, and still are being, largely modified, on account of the ravages of that dangerous little insect, the *phylloxera*, which has damaged the vines to such an extent, that an enormous area hitherto planted with them is now quite unsuitable for that crop, and has to be applied to other purposes. Still these figures will, in the main, give a fair idea of the general proportions of the agricultural distribution.

The great diversity of crops in France is chiefly attributable to the number and variety of the climates, which may be thus classified:

1. The region of the *North*, the most populous and rich, industrially, in the whole of France, comprising the old provinces of Flanders, Artois, Picardy, the Isle of France, Normandy and the district of Beauce (now the department of Seine et Oise). The features of the region are extensive plains, relieved by small ranges of hills and more or less open valleys, and on the north-west it is washed by the waters of the Manche, or English Channel, from Avranches to Dunkirk. The crops consist of corn, rye, barley, oats, colza, flax, hemp, poppy, tobacco, chicory and beetroot. The chief classes of cattle are Flemish, Normandy and Holland. Fat cattle are largely bred; and there is a great deal of dairy farming, for which the excellent pastures are admirably suited; while many celebrated cheeses, such as those of Brie, Livarot, Neufchatel and Camembert, together with Isigny and Gournay butter, are the products of this region. The sheep are mostly of the merino kind. There are a few vineyards, yielding a very common and coarse wine, but many orchards, producing cider and perry. Apples,

cherries, plums and pears are abundant, and a good deal of attention is paid to market-gardening and horticulture.

2. The region of the *West*, from its proximity to the sea, is somewhat rainy and inconstant, though its general mildness is shown by the growth in the open air of the camellia, laurestinus, magnolia, pomegranate and myrtle. It comprises Brittany, Vendée, Poitou, Anjou and a part of Maine, and the soil is of a granite character, with a surface a good deal interspersed with thickets and small woods. Here are cultivated buckwheat, clover, turnips, swedes, flax, hemp, colza and tobacco. The breeds of cattle, which are held in high estimation, are known as Breton, Mancelle and Parthenaise breeds. Brittany butter and Brittany honey are in great request, as is also the cider made in this district;' but there is not much vineyard, the only wine made being that of Anjou or Muscadet, though a good deal of light effervescing wine of this character is produced at Saumur.

3. The region of the *Central Plains* comprises the ancient Bourbonnais, Nivernais, Berry, Lower Burgundy, Orleanais, Touraine and the districts of Sologne, Puisaie and part of Perche. The plains are generally extensive, some of them being well wooded and containing fine pastures, which fatten numerous herds of cattle of the Charollaise breed; others being less fertile, dotted with heaths and ponds, and feeding large flocks of sheep known as *solognotes* or the Berrichone breed. Occasionally, as in Sologne and Touraine, the scenery is diversified with groups of fine trees. The valley of the Loire, which is in this region, is

known for its smiling and fertile appearance, and is a garden of fruit and vegetables. The vines of the district produce a fair quality of wine, the best being those of Irancy, Joigny, Bourgueil and Vouvray.

4. The region of the *Central Hills* embraces the ancient districts of Auvergne, Limousin, Rouergue, Gévaudan, Velay, Forez, Lyonnais and Marches. The land lying high, the chief characteristic is long stretches of mountain pasture, interrupted with many patches of gorse, furze and brake. Rye, oats and buckwheat are the principal crops on these plateaux, while large flocks of sheep and droves of pigs find a somewhat scanty living. The prevailing timber is fir and larch, which impregnate the air with their resinous odours, and in the lower parts of the districts the chestnut tree thrives well. A considerable industry consists of making Auvergne and Roquefort cheese, the latter having come much into request with English epicures.

5. The *Hop* region is still more mountainous than the last, and extends from the old province of Franch-Comté to the northern extremity of the Plateau of the Ardennes, occupying that department and Vosges, besides the province of Champagne to the north. The features of the country are those of elevated ground, with grand forests of pine and other trees, much uncultivated land, and an extensive cultivation of the hop. The crops consist of corn and potatoes, and a good deal of red wine is made, as well as effervescing wines and liqueurs. Cheeses, known as Void and Gérardmer, are also specialities.

6. The region of the *East* is the coldest and most elevated of the whole, extending from the Alps to the

department of Haute-Saône, and comprising old Provence, Dauphiny, Savoy, Franch-Comté, Burgundy and the Maçonnais. High ranges of mountains with the sides clothed with resiniferous forests are the typical features, the pasturages nourishing herds of cattle of the *tarentaise, bressan* and *contoise* breeds, and numerous flocks of goats. Here are made the celebrated Gruyère cheeses, together with those of Gex, Sassenage and Mont d'Or. There are, however, many fertile valleys and hill-sides in which cereal crops are cultivated, together with hemp and wormwood (for making absinthe); and the well-known Burgundy and Maçon wines are grown in the region.

7. The *Maize* region occupies the southern provinces and districts of Languedoc, Guienne, Bigorre, Bearn and Armagnac, Périgord, Angoumois and Saintonge. Great quantities of corn and maize are grown, besides tobacco and hemp, with large beds of osier in the valley of the Garonne. This is also the country of the vine, producing the countless varieties of Bordeaux and Sauterne, with Cognac brandy. Fruits are plentiful in the shape of plums, figs, apricots, nuts and chestnuts, not to mention truffles, those curious earth vegetables which are dug out by dogs trained for the purpose, and which are held in such high estimation for cooking.

8. The *Olive* region is to the east of this last, comprising Rousillon, Lower Languedoc, Lower Dauphiny, Comtat, Lower Provence and Nice. Here we have the olive, the almond, the pistachio nut, the jujube, the caper, the apricot, the fig, pomegranate, vine and the mulberry, besides which there is a cultivation of mad-

der, with cereals, lucerne and saintfoin. Sericulture or silkworm growing is also a speciality of this region, and there is a considerable production of Narbonne honey, lavender and rosemary.

9. The *Orange* region occupies the coast districts in the departments of Alpes Maritimes, Var, and Eastern Pyrenees. Here we meet with a warm, sunny climate, and with fruits like the orange, citron, lemon and Japanese medlars. Here also the eucalyptus grows well, and all kinds of hothouse flowers and shrubs.

Before going into any further particulars as to the growth of crops, it will not be amiss to glance at some of the peculiar features of the country, and see in what respects they differ from ours. The land in France is chiefly occupied by small proprietors, who form the great majority in the country, and property is usually divided into three classes: (*a*) properties averaging 600 acres, numbering about 50,000; (*b*) properties of 60 acres, numbering 2½ millions; (*c*) properties of 6 acres, numbering 5 millions. But the tendency of the times is to break up the large proprietorships, and even the middle-class ones are fast merging into the third, or six-acre list; and this is carried on to such an extent, that at the date of 1870, when these figures were made, upwards of 75 per cent. of the agricultural labourers in every department were small proprietors.

The total acreage under corn (*froment*) in France is about 17½ million acres, and the average yield from 13½ to 15 bushels per acre. The region of the north is that which is the most largely planted with wheat, followed successively by those of the west, east, north-west, central, north-east, south-west, south-east, south,

and Corsica, which has a very small production. The consumption of wheat in France is more than the yield, except in exceedingly favourable harvests, so that she has usually to import the required amount from the United States. Wheat, however, is, as we have already seen, not the only cereal grown in France; for rye is cultivated to the amount of 75 million bushels, and barley of 50 millions. The yield of oats (*avoine*) is large (about 190 millions), especially in the north, where they grow well, gradually diminishing as far as the central zone. *Meslin* is a mixed crop of wheat and rye, which finds favour in some of the departments. The cultivation of maize (*maïs*) is more limited in its locality than other crops, and is found chiefly in the east and south-west, such as the departments of the Landes, Gironde, Dordogne, Haute Garonne, Lot, Côte d'Or, Jura and Doubs. The climate of the north-west does not suit it, and indeed, notwithstanding its rapid producing powers, the cultivation of this cereal does not extend as it should do. Buckwheat (*sarrasin*) is another cereal, serving for food both for man and beast, and is usually grown on poor soils.

Chapter IX.—Food and Drink

One of the most important of French industries under this head is that of growing beetroot, and the subsequent extraction and manufacturing of the sugar contained in it. Next to Germany, France is the largest

beet-growing country in the world. The beetroot (*betterave*) is grown almost entirely in the region of the north, for which the climate and the soil admirably fit it; and depending upon this crop is a most extensive system of sugar manufacturing, employing an enormous amount of capital and workpeople. To show the extent of land occupied by the crop, it is sufficient to state that in 1878 upwards of 1,078,625 acres were planted with it. Beetroot may be regarded in some sense as an agricultural crop, as it is largely utilized in the feeding of cattle; but in the main it must be considered more as an industrial crop, in conjunction with the sugar industry, which, as a rule, is carried on principally in the beet sugar departments. It must not be inferred, however, from this, that beet is the only form of sugar with which France interests herself, for she imports a great quantity of cane sugar from the West Indies, and refines it at home, though not to anything like the extent of the trade in beetroot.

The chief centres of growing and extraction are in the neighbourhood of the following towns and places in department of Nord: Cambrai, Busigny, St. Vaast, Catillon, Cateau, Caudry, Noyelle, Solesme and Ecaillon; in Aisne, at Neuilly and Lesdins; in Somme, at Rozières and Roiselle; in Pas de Calais, at Havrincourt; in Eure, at Etrépagny and Nassandres, &c. In these departments, as well as Oise, Seine et Oise, and Puy de Dôme, there are some 520 sugar extraction factories and 34 refineries, occupying 60,000 workpeople, of whom women and children form about two-fifths. Cambrai is the chief centre of the beet sugar trade, there being at least 25 manufactories there;

and at the Paris exhibition of 1878 there was a very interesting relief map of the town and district, showing the system of pressing by which the beet-juice was brought into the town from the outlying crushing-mills, to be afterwards dealt with. The enormous value of the beetroot is well shown by the following short table, representing the yearly yield and the uses to which it is applied.

Beet sugar	280,000,000	francs.
Beet molasses	24,000,000	,,
Beet pulp for feeding cattle .	16,000,000	,,
Beet liquor for manure . .	2,240,000	,,
Total	322,240,000	,,

Nor is this all; for the juice of the beet, in addition to the sugar, contains a great quantity of extractive matter and alkaline salts. In some beet-growing countries, the waste liquors are thrown away as useless; but in France the distiller gets hold of them and evaporates them, burning the mass in a furnace and thus destroying the organic matter, while he recovers the alkaline salts; and in this way some 2000 tons of carbonate of potash are annually obtained. Moreover, from the organic matter itself, while in process of destruction, a quantity of ammonia water, tar and oil, is given off, which are collected and serve valuable chemical purposes. From all points of view, then, it is difficult to overrate the value of the beetroot crop to the country. An attempt has been made two or three times to grow it in England, and notably at Lavenham in Suffolk, and near Farringdon in Berkshire, for sugar and dis-

tilling purposes; but either from the soil not being suitable, or the expenses of labour being too high, it has never answered.

It is singular that, with all this wealth of sugar, the consumption in France is exceedingly small, although the French people, as a rule, are notoriously fond of sweet confectionery and chocolate. Nevertheless, the consumption is only at the rate of 15 lbs. per head each year, while in England it is about 60 lbs.; and one reason of this is the heavy and increasing duty placed on sugar in the former country, while in England it has disappeared altogether. The result is, that France exports great quantities to England, Switzerland, Italy, Turkey, Sweden, Norway, Russia, Egypt and South America.

A manufacture, rather peculiar to France, is largely carried on in Clermont Ferrand (Puy de Dôme), and, above all, Marseilles, in the production of semolina, tapioca and vermicelli, which are turned out in immense quantities under the name of *pâtes alimentaires* or *pâtes d'Italie.* There is also a considerable industry in the manufacturing of wheat or potato starch, the product from the wheat being called *amidon*, but that from the potato, *fécule;* and it is largely employed in the industrial arts, such as sizing yarns, paper-making, artificial gums, and especially for glucose used in brewing. The wheat starch is made principally in Paris and Nancy, and the potato starch in Paris, Epinal (Vosges) and Compiegne (Oise).

Bakers of course exist everywhere (and nobody who has once visited France can ever forget the delicious bread); but there is also a special and important trade

in the making of gingerbread, for which Rheims and Dijon have always been specially noted. Upwards of 1200 persons are employed in this industry. Biscuits are not in such request in France as they are in England, though for naval purposes there are large factories at Cherbourg, Brest, Lorient, Rochefort and Toulon.

The chief dairy departments of France are those of Calvados, Orne, Manche, Seine Inférieure, Loiret, Nord and Vosges; and the number of milch cows in France is estimated at about 6 millions, although it must be remembered that the French are much more cosmopolitan than the English in the sources of their supply, milk being used pretty largely from goats and asses as well as cows. The butter trade is principally found in the same districts, though certain localities, such as Isigny (Calvados) and Gournay (Oise), have a particular celebrity. The Cotentin peninsula (Manche) has also a very extensive export butter trade, some of the houses sending out from 40 to 50 tons per week. The annual production in France is valued at 440 millions of francs, of which about a tenth part is consumed in Paris.

About 100 million francs' worth of cheese is made in the country, principally in the departments of Aveyron, Seine Inférieure, Calvados, Marne, Creuse, Cantal, Doubs, Vosges, &c. There are certain classes of cheeses which are in much request on French (and frequently English) dinner-tables; but, like our Stilton, it does not follow that they are made exclusively in the places from which they take their name. The best known of them are Gruyère, principally made in

the hill districts of Savoie and Doubs; Roquefort, pretty well limited to that locality in Aveyron; Brie, most of which is produced in Oise; while others less known are Laguiole (an Aveyron cheese), Gérardmer (Vosges), Mont d'Or, Beauvoisis, &c. As a rule, the French cannot be said to be great cheese-eaters, and the bulk of the production is more of an epicurean character than that of a national food.

Poultry breeding and fattening is very largely carried on in the western departments, and particularly those of Brittany and Normandy provinces. The recent Report of the Agricultural Society of Caen (Calvados) states that 40 millions of fowls are kept in France, which produce poultry for the table valued at 158 million francs or £6,000,000, together with 4,696,000,000 eggs, which at 6 centimes each yield to the growers more than £9,000,000. Thus by following an industry which is peculiarly adapted to cottagers and small householders, an annual yield of fifteen million pounds sterling is realized to the country.

As for fruit and flowers, France is everywhere a huge garden, though certain places have a speciality for excellence and abundance of fruit. For instance, the department of Finistère is celebrated for its strawberries, and there is a village near Brest, called Plougartel, which sends annually to Paris about 5 million pounds of this pleasant fruit, for the growing of which 500 acres is planted. Orleans is noted for its figs and nectarines, Montmorency (Seine et Oise) for cherries, Vincennes and Auteuil (Seine) for lettuce, Sceaux for apricots, Puteaux and Poissy for peaches, Pantin and Argenteuil for asparagus, Blois (Loir et Cher)

for its raspberries, and Tours for its plums. Amongst the special fruit trees of France must be mentioned the olive (*olivier*), which is entirely of a southern growth, in the old provinces of Rousillon, Languedoc and Dauphiny. The cultivation has somewhat fallen off of late years, particularly in the departments of Gard, Bouches du Rhône and Hérault, though it has increased in Corsica. The average surface occupied by olive yards is about 290,000 acres, yielding some 7,000,000 bushels of fruit, the greater part of which is of course used for olive oil. The chestnut (*chataigne*) is another rather important crop, being much used for food in some of the departments of the south-west and the centre. The cultivation of tobacco (*tabac*) is increasing, about 25,000 acres having been planted with it in 1878. The statistics of tobacco do not speak very well for the juvenile French population, for it is estimated that one-half of the young people, between 17 and 20, has taken to smoking, in all about 600,000 individuals. Of the male population, between 20 and 40 years, three-fourths, or about 4,000,000, take tobacco in some form or other, while smokers above 40 are estimated at 1½ millions.

There is another crop which, though it does not come under the head of food, may be mentioned here as a useful, though fast declining, industrial crop. It is that of madder (*garance*), which occupies very much the same zone as that of the olive, Avignon being the centre of the madder district. It used to be cultivated in very large quantities, but its employment as a vegetable dye being now so much superseded by the more powerful artificial ones of alizarine and other coal-tar

dyes, the madder is falling out of use, and the acreage under this crop is fast decreasing.

Chapter X.—Food and Drink

Fisheries (*la pêche*) in France have a rather wider significance, when viewed in connection with the food question, than they have in England, as in the former country a vast deal of attention is given to fish breeding, which embraces many classes of fish that with us are not in particular request, although they might be introduced with advantage.

The deep-sea fisheries occupy a large number of sailors, though the localities of their researches, being the haunts of the whale and the cod, scarcely come under the head of French industries; but there is also a considerable fleet occupied in the herring fishery, the total number of sailors and fishermen employed in the sea fisheries being 80,000, and the number of vessels 21,300. Besides these, nearly 46,000 persons gain a living by various kinds of fishing from the shore.

Ostreiculture, or the breeding of oysters, is carried on to a great extent in various places along the coast, in ponds or "parks," dug out generally in the sand and kept in constant communication with the sea. The chief localities where this industry is found are Courseules (Calvados) at the mouth of the river Seulle, St. Vaast de la Hogue, Grand-Camp, Granville, Règne-

ville at the mouth of the Sienne, Cancale, the oysters of which are the most celebrated of all, Vivier-sur-Mer, Fossemont near St. Malo, Brest, Bélon near Quimper, L'Orient, Le Brenéguy, Vannes, Sables d'Olonne, Ile d'Oléron, Marennes, La Tremblade and Arcachon. All these different parks and basins produce oysters of more or less distinctive flavour and appearance, the industry, strictly speaking, dividing itself into the two classes of reproducing and training. The value of the trade may be gathered from the fact that, in 1876, 236,660,222 oysters were placed *in* the parks, of the value of 7,608,821 francs; and that these increased so much in number and quality, that 335,774,070 oysters were taken *out* of the parks, of the value of 13,226,296 francs.

Something of the same system is also practised with other fish, even to mussels, vast quantities of which are reared in properly prepared enclosures (*étangs*), having access to the sea-water. In this branch of pisciculture, which is chiefly carried on in the neighbourhood of Rochelle and Rochefort, and also on the Mediterranean coast, there are 31,608 fish-breeding establishments, occupying 25,000 acres, and employing some 200,000 persons. The breeding of fresh-water fish has also a considerable deal of attention given to it, and there is a celebrated pisciculture establishment at Huningue (Vosges) which has yielded very satisfactory results.

We will now take a brief review of those resources of the State which provide drink for the people, and in this respect we observe a striking difference in the national habits of England and France, the beer of

the former country being for the most part supplanted by wine. A few words will suffice for the beer. The hop region is in the mountainous part of the east of France, comprising the country of the Vosges, the Ardennes and Champagne, though it is cultivated also to some extent in the departments of Meurthe, Pas de Calais, Nord, Somme and Seine Inférieure. The total area under cultivation is about 9000 acres. The two classes of beer which are brewed in France are the *lager* or stronger beer, and the *petite* or weak; but, except in the large cities, there is not a very great consumption of either kind.

The vineyards, however, are of national importance. Up to within the last two or three years the amount of land devoted to vineyards consisted of 6,500,000 acres, the produce of this enormous extent varying according to the character of the year and the nature of the harvest. For instance, in 1875, one of the most productive of recent years, the total vintage yield of France was about 1,720,000,000 gallons, of the value of £68,000,000. In the year before it was 176,000,000 gallons less, and since 1875 the production has been rapidly declining, not, unfortunately, from fluctuations of harvest, but from the attacks of a most destructive little insect, called the *phylloxera*, which lays its eggs at the roots of the vine and slowly but surely causes it to wither away. Up to the present time, no remedy has been found for the plague, short of utter rooting up of the vines; and it is calculated that within the last three years upwards of a million acres of vineyard have been destroyed, causing an immense loss to the nation, and a very serious scarcity of wine and brandy to all the civilized world.

So general is the growth of the vine in France, that there are only about 10 departments which do not cultivate it, these being in the north and north-western regions, where the climate is not suitable. It is needless to detail all the vine-growing districts, but it will be sufficient to point out Hérault, Charente Inférieure, Gironde, Charente, Gers, Gard, Dordogne, Aude, Var, and Lot et Garonne, as the ten which stand at the head of the list as regarding acreage of vineyard. Amongst this enormous production of wine, there is every possible variety of flavour, strength and quality, from the highest fancy price at which wine is unattainable by all but millionaires, to the lowest and commonest wine drunk by the peasantry. It will be enough, however, for us to glance at those principal classes of wine which make up the bulk of the French trade, and which are best known to ordinary wine-drinkers. These are three—viz. Bordeaux, Burgundy and Champagne. The Bordeaux or Bordelais wines are chiefly grown in the department of Gironde, and the best known brands in the Médoc district, along the left shore of the Garonne, between Bordeaux and the sea. These wines are subdivided into several classes, such as (*a*) Chateau-Lafitte, Chateau-Margaux, Chateau-Latour and Chateau-Yquem, all wines of the highest quality and price; (*b*) Léoville, La Rose, Cos d'Estournel, &c., wines of a second grade, with three or four other classes that do not hold so high a position in the market. So minutely are the different qualities marked, that even the very low-classed wines drunk in the country are known by the three distinctions of *vin bourgeois*, *vin d'artisan* and *vin de paysan*, being

the three relative wines patronized by the shopkeeper, the skilled workman and the labourer. The average annual yield of the Bordelais is about 74,800,000 gallons.

The Burgundy wines are represented by the departments of Côte d'Or, Rhône, Saône et Loire and Yonne, and produce an average yield of 85,228,000 gallons. The fruit of these wines is grown on the slopes of the Cote d'Or hills, in the districts of Beaune and Nuits, and the best known brands are those of Chambertin, Clos-Vougeot, Romanée, Conti, Pomard, Montrachet, &c. Next in estimation come the Beaujolais and Maçonnais wines, such as Fleurie, Pouilly and Thorin, which are succeeded by Olivettes and Chablis.

The Champagne wines, grown in the department of the Marne, are nearly all of an effervescing character, and are known all over the world, together with a great deal that never came from Champagne or even France. It is a singular fact that, though Champagne wines are white, the vines which produce the grapes are of a black stock, and the colour (and much of the character) is due to the manipulation of the growers. The average yield is small, about 9,746,000 gallons, and the export in 1877 was 147,022,182 bottles. The principal champagne growers are few, and contain the well-known names of Pommery, Rœderer, Heidsieck, Perrier-Jouet, Clicquot, Moet and Chandon.

Besides these special wine regions, immense quantities of wine are produced in the departments of Dordogne, Jura, Aube, Mainè et Loire, Indre et Loire, Haute-Garonne, Basses Pyrénées, Drôme, Vaucluse, Gard, Hérault, Aude and Pyrénées Orientales, more or less used for home consumption.

The majority of the brandies, for which France is also famous, come from the department of Charente, Cognac and Segonzac being the chief places of production; next to which, in order of merit, come the brandies of St. Jean d'Angely, Surgères, Aigrefeuille, Rochelle and the islands of Ré and Oléron. A considerable quantity of brandy known as Armagnac is made further south in the departments of Landes, Gers and Lot et Garonne, and these two kinds, Cognac and Armagnac, are the ones usually exported. In addition to these brandies for drinking purposes, there is a great industry in the fabrication of what may be called industrial alcohol, viz. alcohol obtained during certain manufactures, such as of beetroot, molasses, &c. Cider and perry are brewed in the provinces of Normandy, Brittany, Maine and Picardy.

Before quitting the subject of drink, it will not be amiss to cast a glance at the mineral waters of France, which from all points of view give rise to very considerable industry, whether in the shape of visitors who resort to the baths for health purposes, or of the preparing and sending away of the medicinal waters. Most of these waters are found in mountainous districts, and contain more or less valuable chemical ingredients. The best known of these waters are those of Cauterets (Hautes Pyrénées), Montmirail (Vaucluse), St. Honoré (Nièvre), La Mothe (Isère), Baréges (Haute Pyrénées), Vals (Ardêche), La Bourbole (Puy de Dôme), St. Sauveur (Haute Pyrénées), St. Nectaire (Puy de Dôme), Busang (Vosges), Eauxbonnes (Basses Pyrénées), Aulus (Arriège), Vichy (Allier), Royat (Puy de Dôme), Bagnère de Bigorre (Hautes Pyrénées). A great

many people are employed, directly and indirectly, in these establishments, and a large trade is carried on in the exportation of the waters.

Chapter XI.—Forest and Wood Industries

The woods and forests of France form a very important part of the property of the country, and are held in high estimation as such. They are looked after with great care, forestry, indeed, forming a branch of education which in England is entirely neglected. They cover a large surface, no less than 22,968,260 acres, of which 2,417,795 belong to the State, 5,226,970 to the different communes, and the remainder to private individuals. The following are the principal forests of France, some of them occupying a surface of 100,000 acres. In the region of the Nord are Compiègne, Fontainebleau, Rambouillet, Villers Cotteret and Mormal; in the region of the East are the forests of Haye, of the Vosges and Jura mountains, Chaux, Grand Chartreuse and Dabo; in the region of the West, the forests Bercé-Percoigne and Ecouves; in the region of the Centre, the forests of Orleans (the most extensive in France), of Tronçais, Vierzon, Chateauroux and Bertranges-Guérigny; in the region of the South, the forests of Quillau, Soule, Lannes, l'Estérel, Baygory, Vercors and Barousse. A large number of persons, between 4000 and 5000, are employed in officially looking after these forests, and there is a school of forestry at Nancy for the special education of young men destined

for this branch of the public service. An enormous amount of wood is annually consumed in France, partly for building and carpentry, but the greater portion for fire-wood; for it must be remembered that, though the use of coal as a fuel is fast increasing, and particularly in the large towns and sea-ports, there are vast districts in which the only fuel is wood, and that too in localities where iron is smelted with charcoal. This is one of the reasons why the consumption of wood in France is so enormous, the supply, large as it is, being so deficient that the importation of foreign wood annually amounts to the value of 204 million francs.

A good many industries depend upon the forest products, the principal of which are, the cork trade, the preparation of fire-wood, tanning barks, resins and basket-work. The cork (*liége*) is the product of a tree that grows principally in Algeria, Spain, Corsica and the south of France. It is a very long time before the bark is fine enough to be stripped and made into corks for bottles (*bouchons*), or sheet cork. The manufacture of the former gives occupation to some forty communes or parishes in the departments of Var and Lot et Garonne. The trade is of considerable importance, and Paris alone uses every year between three to four million corks of the value of about 3½ million francs.

Charcoal burning and preparation also employs a large number of persons who reside in the forests, and indeed seldom leave them. Chemical industries of great importance are nearly allied to and dependent upon the charcoal trade, such as the production of tar (*goudron*), tar oil, pyroligneous acid, acetates of lime,

soda, &c. Tanning barks are yielded from various trees, but more especially from the oak; and large quantities of oak bark are furnished from the Ardennes, Meurthe et Moselle, Meuse, Nièvre, Yonne, Saône et Loire, Côte d'Or, Ille et Vilaine, Deux Sèvres and Var.

All along the coast of Gironde and Landes departments, there are dense woods of pines, which are valuable not only for their timber, but for the amount of resinous products that they yield. From the gum that these trees exude is obtained essence of turpentine, pine tar, colophane or yellow resin, and various other matters of the greatest value in medical and industrial arts. There is also an industry employing a good many hands in wicker and basket making (*vannerie*) from the osier, which is cultivated largely in Haute Marne, Meuse, Ardennes, Aisne, Seine et Marne, Manche, Oise, Vaucluse and Haute Garonne. The most important wicker-work district is that of Origny-en-Thiérache, near Vervins in Aisne.

Chapter XII.—Railways and Shipping Ports

France, like the rest of her neighbours, is gradually developing her railway system; and if she has not already covered the surface of the country with a network of lines, as has been done in England, it is because the surface is of so much greater extent, and contains many wide districts with no very important industrial developments. Nevertheless, the principal

town and cities of the State are gradually becoming united with the metropolis and with each other, and the next ten years will witness a very great increase in this development, if the proposals now being put forth are carried out.

It may not be without interest to mention that the first railway ever made in France dates from 1823, and was laid between St. Etienne (Loire) and the little town of Andrézieux, followed immediately afterwards by a line from St. Etienne to Lyons. These were both worked by horse-power, and a locomotive was added in 1832, so that the French railway system is of about the same age as the English, although the latter has increased very much more rapidly.

In round numbers, the number of miles of railway at present in use in France is about 16,000, which, as in England, are worked by a comparatively few great companies.

The Northern line (*Chemin de fer du Nord*) accommodates the whole of the country between Paris, the Belgian frontier and the north-west departments, and is commercially of more importance than any line in France. Starting from Paris, it sends out one trunk line to Creil, Amiens, Abbeville, Boulogne and Calais, forming the international mail route between France and England; and an alternative line is also given to Calais by Amiens, Arras and Hazebrouck, with branches to Dunkirk. The north-west coast is also reached at Tréport by a line through Beauvais, with cross branches to Gisors, Rouen, Amiens and other places. Communication between the Belgian frontier and Brussels is maintained by two lines at least, one from Paris to

Compiègne, Tergnier and Erquelines, there connecting with the Belgian lines to Charleroi; a second by Lille, Mouscron and Valenciennes; while a third approaches the Luxembourg border through Soissons, Rheims, Givet, Sédan and Longwy. The intervening country throughout this great extent is filled up, according to the nature of the district, by many branch and cross lines. The coal basin of the Nord is completely intersected with them, and an enormous traffic is thereby caused, partly by the English and Belgian intercommunication, and partly by the transit of coal, iron and textile goods, from the manufacturing centres of Lille, Roubaix, Dunkirk, Cambrai, Bethune, Valenciennes, Somain, &c., to the metropolis.

The Western railway (*Ch. de fer de l'Ouest*) may be rather looked upon as the agricultural and provision system of railway, reaching as it does from Paris (St. Lazare) to the western coast, and passing through the richest agricultural and dairy lands of Normandy and Brittany. Its main line runs from Paris to Mantes, Rouen, Yvetot and Havre, a branch going off at Rouen to Dieppe, and also one to Amiens. A second route to Dieppe is provided by Pontoise and Gisors. Another trunk line goes off at Mantes to Bayeux, Caen, Evreux and Cherbourg; while a third runs by Chartres, Le Mans, Rennes and Morlaix to Brest; and a fourth by Argenton and Flers to the sea-port of Granville. By means of branches, communication is given to the ports of Quimper, L'Orient and Vannes, and a number of inland towns put in connection with the main lines. A considerable traffic in passengers and provisions is carried on between Dieppe, Cherbourg, Havre

St. Malo, and the English sea-ports of Weymouth, Southampton, Littlehampton and Newhaven, and also to the Channel Islands.

The Eastern line (*Ch. de fer de l'Est*) is a most extensive system, communicating directly with South Germany, and thus forming an international service to Strasburg, Stutgardt, Dresden, Munich, Vienna and Constantinople. The main line runs from Paris to Chateau-Thierry, Meaux, Chalons, Bar le Duc, Toul and Nancy, arriving at the German frontier at Avricourt, not far from Strasburg. Another international line runs north of this, past Soissons, Mezières and Sedan, to Thionville and Metz, the latter now a German city in Alsace-Lorraine; while a third approaches Alsace in its southern frontier, running from Paris to Troyes, Vésoul, Belfort and Mulhouse. A great many cross lines exist here also, and accommodate the wine country of Champagne; but there is no industrial district at all to compare with that of the Nord, and the gaps without railway accommodation are consequently more frequent.

The Orleans railway system occupies the centre of France pretty well from Paris to the south, one long trunk line stretching from Paris to Étampes, Orleans, Argentan, Limoges, Villefranche and Toulouse. From Orleans there is a deviation south-west to Blois and Tours, from whence lines branch away to Angers and Nantes in one direction, to Poitiers, Angoulême and Bordeaux, in another; while to the south-east this company serves Bourges, Nevers, Clermont, and a number of similar towns in the central region.

The Southern Company (*Ch. de fer du Midi*) occupies

the ground south of Bordeaux, and forms the international road of communication to Spain, viâ Biarritz and Bayonne. All the departments and towns on the northern slopes of the Pyrenees are connected by the Midi lines, a long trunk railway running from Bordeaux to Agen, Toulouse, Narbonne and Cette, and from thence to Perpignan and into Spain (Barcelona). There is a considerable traffic by this system of tourists and visitors to the many mineral springs and bathing-places of the south. The Lyons and Mediterranean railway is a very important one to France, not solely because it accommodates a large and important section of the country, but because it serves as the great highway between Paris and Italy, and, for the matter of that, is the route extensively travelled by English passengers and mails to India viâ Brindisi. The main line extends from Paris to Lyons by Tonnerre, Dijon, Beaune and Maçon; but at Lyons there is a great bifurcation, one branch going off to Chambéry, Savoy and so to Turin (Italy), the other proceeding due south to Valence, Avignon and Marseilles. From the latter port the Algerian traffic by steamer commences, while a coast line diverges west and east, the former for Montpellier, Cette and Toulouse, the latter to Toulon, Cannes, Nice, Mentona and the Riviera. This line is one of much interest to English invalids, proceeding to the mild southern coast.

These, then, are the chief railway systems which provide travelling and traffic accommodation for the French, and the numbers of foreigners who have to cross French soil to reach England or other parts of the continent. These lines are likely to be very

much increased within the next ten years, it being proposed to devote a large annual sum towards covering the country with a net-work (*reseau*) of new lines, as also a more complete system of canals, by which a cheaper mode of communication may be obtained than by the present railway system between the industrial centres and the metropolis. The rate of travelling on the French lines is much slower than on the English, except by some of the express international trains, which run at a pretty high speed; on the other hand, greater safety is obtained, and although accidents do happen, they are not so frequent or so calamitous generally as in England. There is but little competition amongst the systems of France for traffic, the great companies before mentioned amicably sharing the country between them, and particularly where the traffic affects the sea-ports. We find that in this respect the following are the outlets of the various lines:

Nord.—Dunkirk, Gravelines, Calais, Boulogne.

Ouest.—Dieppe, Harfleur, Havre, Honfleur, Caen, Cherbourg, Granville, St. Malo, Brest, L'Orient, Vannes and Nantes.

Orleans.—Nantes and St. Nazaire, Rochelle, Rochefort, Bordeaux.

Lyons.—Marseilles, Toulon.

The *Est* and *Midi* have no shipping ports.

The international traffic is served by the Nord for England and Belgium; the Est for Luxembourg, Belgium and Germany; the Midi for Spain; and the Lyons for Switzerland, Italy and Spain.

Of the French shipping and commercial ports, the

most northern is that of *Dunkirk*, near the Belgian frontier, a busy, active place, with a population depending principally upon textiles, and more especially jute spinning. About 6000 vessels annually enter the harbour, which has been of late years enlarged and improved. The chief imports are coal, wool, jute, cotton, iron and machinery, from England; linseed from Russia, Germany and India; wheat and maize from the United States; guano and nitrate of soda from Peru; iron ore from Spain and Algeria; timber from Norway, Sweden and Russia. The exports are jute yarn (spun in the Dunkirk mills), sugar, agricultural and vegetable produce, principally to Great Britain. Dunkirk is also the head-quarters of the Iceland fishery.

Gravelines is a small decayed town and port at the mouth of the river Aa, with a tolerable export trade in fruit.

Calais is a town of great importance, as being immediately opposite the English coast, and consequently the chief mail and passenger station for Great Britain. The harbour is not very accessible, and extensive works are at present being carried out for its improvement. Fully a quarter of a million passengers annually pass through Calais on their way to or from England; added to which, the port has a large trade. The imports are iron, coal, woollen, cotton and flax yarns, machinery, timber, ice from Norway, &c.; and the exports are eggs, vegetables, fruit, wines, glass, woollen goods, sugar, poultry, osier and basket work. Calais has also a considerable fleet of fishing vessels for cod and herring.

Boulogne is a large and busy sea-port of some 42,000

inhabitants, greatly frequented by English residents and travellers to France by the Folkestone route. It is situated at the mouth of the Liane, and has good harbour accommodation. The imports are coal, iron, raw silk, cotton, wool, undressed skins and furs; while the chief exports are manufactured silks, wool, cotton and linen, wine, toys, sugar, jewellery, glass, &c.; and Boulogne stands at the head of the French North-sea fisheries, despatching annually a considerable fleet as far as Iceland in search of cod.

Passing the bathing-places of Étaples, St. Valery and Treport, we next come to *Dieppe*, at the mouth of the Aulne, which is chiefly a port for a line of passenger steamers from the London, Brighton and South-coast terminus at Newhaven, which brings a great number of English visitors. Dieppe has a trade in watches and clocks, bricks and tiles, paper and patent fuel; the imports being coal, iron, cement, woollen and cotton goods, pottery, chemicals and colonial produce; and the exports, Paris and Lyons goods, wine and spirits, fruit, flowers and vegetables. On an average, there are about 70,000 passers annually through the town between England and France.

Next to Dieppe is the little port of *Fécamp*, of some importance in the Newfoundland and Iceland fishing trade, as well as those of mackarel and herring. It also possesses cotton factories and fishing-net making establishments. The imports are few—coals from England and timber from Norway. *Havre*, at the mouth of the Seine, is one of the most important and busiest sea-ports in France, with a fine harbour, in which extensive new works have recently been completed.

Havre is the point of arrival for raw cotton in bale, coffee and general colonial produce; its imports being sugar from the West Indies, cotton, coffee, hides, wool, logwood, fustic and other dye-woods, cocoa, wheat, rice, petroleum and alcohol; while the exports are silks and ribbons, woollen and cotton goods and hosiery, beetroot sugar, china ware, butter, fruit and wine. Amongst the trades of the town are ship-building, sugar-refining, rice-cleaning, engine shops, &c. Havre may be called the Liverpool of France, both from the amount of business done and the nature of the trade.

A little higher up the estuary of the Seine is the insignificant port of *Harfleur*, carrying on a coasting trade, and exporting butter and eggs to England. The same may be said of *Honfleur*, on the south side of the estuary; but the English export trade is one of very considerable extent. In the matter of eggs, upwards of twenty-five million dozens are annually sent to London, together with poultry, fruit, butter, barley, rye, horses and cattle. The town itself possesses saw-mills, oil, soap and paper-mills, with a limited amount of ship-building. The imports are coals, iron, cement, wheat and oats, &c.

Trouville, the next to Honfleur in position, is a small port at the mouth of the Calonne, with a coasting trade, but better known as a fashionable bathing-place. *Dives* is another little port, which is somewhat growing in importance; and to this succeeds *Caen*, an interesting town some distance up the Orne, importing coal from England, and exporting barley and iron ore. Caen is a busy place, with a considerable textile trade (especially lace), and an industry of rape-seed oil and oil-cake.

Passing the small coasting port of *Courseulles*, where oyster-breeding is carried on, the next place of importance is *Cherbourg*, which, though celebrated chiefly as a strongly fortified naval station, has of late years been assuming a good deal of activity in connection with English trade, there being more than one line of steamers to Southampton and Weymouth, and it being also a port of call for the West Indian and South American steamers, and those between Hamburg and New York. Cherbourg imports coal, cotton goods, esparto grass (for paper-making), linen goods, artificial manures, china clay, rice, wheat and timber; exporting butter, eggs, poultry, meat, fruit and vegetables. On the western coast of Manche are the rather small ports of *Coutances* and *Granville*, the latter deriving a certain amount of trade from its proximity to Jersey and the Channel Islands, and exporting butter and eggs to England. Crossing the Bay of Cancale, celebrated for its oysters, we arrive at the port of *St. Malo*, the only one in the department of Ile et Vilaine, where a pretty brisk business is done in coasting; the imports consisting of coal, iron, hemp, cement and timber; the exports of buckwheat, lead ore, apples and potatoes.

There are but few ports on the coast of Côtes du Nord, and those are scarcely worth mention. *St. Brieuc*, indeed, is the only one of the least importance. Passing on to Finistère, the first port is that of *Morlaix*, which has an active coasting trade and a fair amount of foreign shipping entering the harbour. The imports are coal, cement, bricks and tiles, machinery and jute, from England; timber and linseed from Russia; salt pork from the United States; wine and fruit from Spain.

The exports are barley, farm produce, lead ore and pit-wood—nearly all to the opposite shores of Britain. There are a good number of little ports and villages scattered along the coast, the inhabitants of which are agricultural labourers and sailors by turns, according to the seasons, and in the aggregate a considerable amount of produce is shipped.

Rounding Cape Ushant, the Portsmouth of France is reached at *Brest*, a most important naval station, situated at the entrance of an inlet of the sea called the Iroise. As a shipping port, however, it is surpassed by most of its neighbours, the trade of the town being almost entirely dependent on and regulated by the dockyard. There are two harbours, of which the inner one is land-locked, and can take in 50 frigates; while the outer harbour will hold the largest fleet in the world, there being deep water throughout. The defences are very strong. There is another naval dockyard further south at *L'Orient*, although not of the same size and importance as Brest. It has a fair trade with England in wood for telegraph-poles, flour and provisions; while quantities of preserved sardines, caught here, are sent to Norway.

The next port of any size is that of *Nantes*, situated a considerable distance up the Loire, which, from the difficulties placed in the way of navigation, has given rise to the growth of the smaller port of *St. Nazaire*, at the very mouth of the river. Although this latter is dependent on the trade of Nantes, it has grown rapidly of late years, and now threatens to throw off the yoke and become a competitor to the mother city. St. Nazaire has good dock accommodation, and is the head-quar-

ters of the transatlantic steamers; but its business, so far, can scarcely be dissociated from that of Nantes, which has a large trade in sugar-refining (a great quantity of refined sugar being exported), soap-making, the preparation of tinned provisions, and lead-smelting. Large quantities of colonial sugar are imported, and Nantes is also the centre of the trade in cereals. Its preserved provisions have a great reputation, and consist of sardines, tunny fish, lobsters, green peas, asparagus, meat and game; and this in its turn gives rise to an important industry in the making of tin boxes. Lead is imported from Spain and Sardinia; coal from England; and for the soap trade requirements, there is an enormous importation of palm nuts and oil, sesamum and arachides, from Sierra Leone, Coromandel and the Levant. Large works are about to be commenced with the view of improving the Loire navigation and shortening it by canal cuttings.

Below Nantes, the coast is principally given up to oyster breeding, Sables d'Olonne, in Vendée, being a rather important place in this respect. *La Rochelle*, opposite the Ile de Ré, had a large ship-building and brandy-shipping trade; but the former of these has fallen off of late years, and its place taken by an importation of iron ore from Bilbao, in the north of Spain, and this, with coal and wood, makes up the chief trade of Rochelle. At the same time there is a good deal of activity in the coasting trade for brandy, wine and salt, the latter employed in preserving the cod fish brought hither from Iceland and the North Sea. La Rochelle has a very safe and easily-gained roadstead, but the harbour is bad, and it is proposed to make an

entirely new one at La Mare à la Besse. A little above and not far from La Rochelle is the small port of *Marans*, where a good deal of wheat is shipped from Fontenay and Luçon, the grain-growing centres of Vendée; it is also connected by a canal with Niort, in Deux Sèvres, and carries on altogether a pretty brisk trade.

Further south are the ports of *Tonnay Charente* and *Rochefort*, situated some little distance up the Charente river. From both these places the principal shipments of brandy are made; though of late years the ravages of the phylloxera amongst the vineyards have caused these shipments to fall off greatly. Rochefort is not entirely dependent on trade, as it is a Government dockyard of some importance. At the mouth of the Gironde is the little port of *Royan*, which at present holds the position to Bordeaux that St. Nazaire does to Nantes; but it is not unlikely that before long Royan will become a big place. As far as the amount of business carried on, *Bordeaux* is the most prosperous and busy port of France, the value of her trade being estimated at something like £25,000,000 per annum. But a small proportion comparatively of the exports consist of manufactured goods, and these are principally of chemicals (tartrate of potash), madder extract, dyes, perfumery, silk, woollen, cottonand linen tissues, plaited straw goods, felt and straw hats, haberdashery and clothing. The great bulk of the exports is in the Bordeaux wines, the foreign demand for which has increased tremendously during the last ten or twelve years, and more in England than in any other countries. What with wine in cask and bottle, there are

shipped to England alone about 30 million gallons annually. Wine is of course the staple trade of Bordeaux, but she also exports brandy, refined sugar, nuts, almonds, fresh and dried fruits, fish, hides, pit-wood, and a variety of other articles. The imports are on a smaller scale; and, singularly enough, the material which is in greatest demand is wood for staves, showing plainly its connection with the wine trade. This is imported to the value of nearly one and a quarter of a million of pounds sterling. The other chief imports are guano, hides, wool, grain, sugar and molasses, coffee, tobacco, coal, copper. As regards the amount of shipping employed, Bordeaux has the largest tonnage entering her docks annually in all France. From the mouth of the Gironde southwards, there is nothing of importance. The whole coast past Arcachon is a dreary succession of "dunes" and sands, the only industry along it being that of oyster breeding. Almost at the extreme south of France is the fashionable bathing-place of Biarritz; and not far from it, at the mouth of the Adur and at its confluence with the Nive, is the port of *Bayonne*, which has a considerable amount of trade in the export of hams, wines, chocolate and preserved fruits. Its principal trade lies with the neighbouring country of Spain.

On the Mediterranean side, we find a scarcity of ports of any size, though the two which are situated on that coast are two of the most important in France. Proceeding northwards from the Spanish frontier are *Narbonne* and *Cette* respectively, with a trade in honey, olive oil and wine; and it is not until we come beyond the delta of the Rhône that we reach *Marseilles*, the

bulk of the trade of which is to the West Indies, United States, Mexico, Africa, China and Japan. Steamers run also regularly between Marseilles, Alexandria and Algeria. The harbour is of great size, and the docks and warehouses on a scale almost unequalled. A range of the latter, near the Bassin du Lazaret, cost £500,000 in building, and will accommodate 50,000 tons of goods. Marseilles is a great manufacturing city, with enormous soap and oil works, sugar refineries, lead-smelting works and engineering factories. Further along the coast is *Toulon*, which, like Brest and Cherbourg, is more dependent on its splendid dockyard and arsenal than upon the foreign shipping. The coast between Toulon and the Italian frontiers can scarcely be called a commercial one, there being no ports, though there are plenty of towns like Hyères, Cannes, Nice and Mentona, which invite the health and pleasure seeker to enjoy the exquisite climate of the south. All these places may be called English colonies, so large is the population of invalids and their friends who annually migrate hither to escape the winter and chilly springs of Great Britain.

CHAPTER XIII.—FRENCH ISLANDS

A BRIEF mention of the islands adjoining and forming part of French territory will not be out of place, especially as Corsica (*Corse*) is not only an island of very considerable size (the third largest in the Mediterra-

nean), but forms actually one of the departments of France. It is distant from the mainland of France 90 miles, from that of Italy 54 miles, while it is separated from Sardinia only a few miles by the Straits of Bonifaccio. The length of the island is 115 miles, by 54 broad, the coast-line being about 290 miles. Its western coast is characterized by high ground and indented line, forming several bays with excellent harbourage: the eastern coast is marked by a low elevation of surface towards its centre, and resembles more the coast outline of the Gulf of Lyons. Its interior is intersected for its whole length by a chain of mountains, running from Cape Corse on the north to Cape Bonifaccio on the south, and forming a portion of what is known as the Sardinio-Corsican system. The main backbone is flanked by numerous rugged and escarped shoulders, intersected by narrow valleys and gulleys. It rises to lofty heights, of which the principal are Monte Rotundo (over 9000 feet), Monte d'Oro (8800), Paslia-Orba and Monte Cinto.

As might be expected from the granitic character of the mountain system, Corsica abounds in minerals, although they have not been worked hitherto in a very systematic manner. These minerals are chiefly copper, lead, iron ore and antimony. The copper mines of Ponte Leccia, about midway between Bastia and Ajaccio, are exceedingly rich in that metal, which is also worked with English capital at Luinguizetta, Cardo and Olmite; antimony is worked at Luri; lead (rich in silver) at Lama and Argentelli; marble at Bastia and Venaco; and there are valuable beds of lignite or tertiary coal in the valley of the Golo, near Ponte

Leccia. Mineral springs abound in the island, such as those of Orezza and Guagno, the latter valuable for the sulphur which it contains. Agriculture is at rather a low ebb in Corsica, and it is a singular thing that what is required for the cultivation of the land is all done, not by Corsicans, but by Italian labourers, called Lucchese, of whom some 10,000 migrate every year from the mainland, returning thither during the summer and autumn, when the prevalence of malaria makes the island unhealthy to work in.

There are considerable extents of forests, the beech, birch, oak and pine occupying the higher lands, to which succeeds the zone of the chestnut, covering a wide tract of what is known as the "Castegneccia;" while the olive-tree grows near the coast, and the low-lands are marked by extensive districts of brushwood, consisting of myrtle, cistus and white heath, and called generally by the name of "maquis." This heath, indeed, gives rise to a large industry, the roots being dug up and cut into rough forms of tobacco-pipes by circular saws driven by the water-power of the hills. These are sent to France in immense numbers, and thence exported to America, where they are sold as briar-wood pipes. Olive oil is produced principally in the north-west of the island called Balagna, and about 1000 tons a year are sent to France, where it is quoted at the highest price of all the imported oils. The citron is cultivated, though not to a very large extent; and a singular industry exists near Ajaccio for extracting oil from the kernels of the olive berry, of quite a different quality from that of the ordinary olive oil.

The few remaining industries of Corsica are princi-

pally those affecting provisions. There is a curious export of blackbirds (*merles*), which come in vast numbers each winter to feed on the berries of the myrtle and arbutus, not only getting very fat, but acquiring a certain excellent flavour. Nearly half a million of these are exported to the continent, where they are held in high repute. An immense number of fish are bred and fed in the lagoon of Biguglia, near Bastia, particularly eels and grey mullet. The former are all sent to Naples, the latter to Nice and Marseilles, where the roe is dried, under the name of "boutarga," and fetches a good price. It will thus be seen that Corsica does not take a very high position in the industries of France, nor perhaps is it likely to do so, as long as the Corsican natives keep their character for pride, idleness and revengeful feeling.

The chief ports (there are no inland towns except Corte, at the foot of Monte Rotundo) are *Bastia* (20,000), on the eastern coast, having communication with Marseilles, Nice and Leghorn, and exporting principally olive oil, fish and a few minerals. *Ajaccio*, on the western coast, is more interested in mining affairs. From the nature of the climate here, not a few English and other invalids take up their residence during the winter, and there is frequent communication with Marseilles. The other ports are insignificant, and consist of Calvi in the north, Bonifaccio in the south, whence a considerable amount of fish is exported, and Rousse on the north-west. The average annual imports of Corsica are valued at about 27 million francs, and the exports at 26 millions.

The remaining islands off the French coast are but

of little importance, and are soon summed up. They are, La Camargue (off Bouches du Rhône), where there is an industry of breeding mussels and other shell fish; Iles de Ré and d'Oleron (off Charente), where some brandy is distilled and oyster cultivation is carried on; Iles Dieu, Noirmoutiers and De Bouin (off Vendée); Ile de Groix and Belle Isle (off Morbihan); Ile d'Ouessant, or Ushant (off Finistère); and Iles d'Hyères (Var).

CHAPTER XIV.

LESSON TABLE OF INDUSTRIES

[The names of those towns only are given which have some special industries. The figures denote the population]

AIN—Agriculture; iron ore; wine; textiles.
Amberieux—Blanket weaving.
Belley—Wine growing.
Bourg—Wine growing.
Gex—Cheese making.
Jujurieux—Silk trade.
Lelex—Asphalte quarrying.
Mont d'Or—Cheese making.
Seyssel—Asphalte quarrying.
Trèvoux—Wine growing.
AISNE—Woollens; wine.
Bohain—Shawl weaving; embroidery.
Chauny—Glove making.
Hirson—Glass making.
Laon (10,000)—Stockings and hat making; wine growing.

Neuilly—Beetroot growing and sugar extraction.
Origny—Basket and wicker work.
Quinquengrogne—Glass making.
St. Gobain—Mirror glass making.
St. Quentin (35,000)—Cotton spinning; linen and wool factories; shawl weaving; iron foundries; sugar refining.
Vauxrot—Glass making.
Zesdins—Beetroot growing and sugar extraction.

ALLIER—Pottery; iron and coal.
Bèzeret—Collieries; iron and steel works.
Buxière-la-Grue—Collieries.
Commentry—Iron and steel works.
Vichy (5000)—Mineral waters and baths.

ALPES (BASSES)—Wine.
Digne-Castellane—Wine growing.
Forcalquier—Wine growing.
Sisteron—Wine growing.
Volonne—Lignite coal working.

ALPES (HAUTES)—Lead mining; silk throwing; wine.
Gap—Wine growing.
Embrun—Wine growing.

ALPES (MARITIMES)—Copper; olives; oranges; wine.
Cannes (10,000)—Orange and lemon growing; flower distilleries.
Grasse—Olive oil; wine growing.
Nice (54,000)—Flower and perfume distilleries; wine growing.

ARDÊCHE—Silk cultivation; iron; lead; wine.
Annonay—Gloves; paper making; silk throwing.
Cheylard—Silk throwing.
Flaviac—Silk growing.
La Coupe—Basalt quarrying.

La Voulte—Iron and steel making.
Largentiere—Wine growing.
Malbosc—Antimony mining.
Privas—Iron and steel works; silk throwing; wine growing.
Tournon—Wine growing.
Vals—Mineral waters; silk throwing.
Volant—Basalt quarrying.

ARDENNES—Iron; copper; woollens; nails.
Charleville—Slate quarries; nail making; iron foundries.
Givet (6500)—White lead, glue, tobacco pipe and sealing wax factories; skin and leather trade.
Grandpré—Phosphate of lime quarries.
Longwy—Iron works; earthenware.
Maison Rouge—Glass making; collieries.
Nouzon—Nail making; hardwares.
Pure—Iron works.
Sedan (15,000)—Woollen cloth mills.
St. Marceau—Nail making.

ARIÈGE—Iron, lead and salt.
Aulus—Mineral waters; salt working.
Rancié—Iron ore working.

AUBE—Iron; wine.
Nogent—Cutlery and hardware.
Romilly (5000)—Cotton hosiery; woollen and cotton mills; basket and wicker work.
Troyes (38,000)—Cotton hosiery; woollen and linen mills; leather; thread; stocking and corset making.
Villeneuve—Cotton hosiery.

AUDE—Wine; olives; woollens; salt; iron and copper.
Carcasonne (21,000)—Woollen cloth and dyeing works; wine growing.

Montgaillard—Copper mining.
Narbonne—Honey; cheese; wine growing.
Padern—Copper mining.
Villaudebelle—Manganese working.

AVEYRON—Iron and coal; lead; cheese.
Aubin—Iron and steel works; lead mining.
Cranzac—Collieries.
Decazeville—Collieries; iron works.
Laguiole—Cheese making.
Millau—Leather trade; wine growing.
Mondalzac—Iron and steel works.
Roquefort—Cheese making.
St. Affrique—Wine growing.

BOUCHES DU RHÔNE—Wool; salt; olives; iron and copper; wine.
Aix (28,000)—Olive oil; wine growing.
Arles (26,000)—Locomotive works; olive oil; wine growing.
Baux—Mines of bauxite or hydrate of alumina.
Marseilles (315,000)—Shipping and mail steamer port for Algeria and Alexandria; soap and oil works; fez caps; engineering works; lead smelting; sugar refining; rice and semolina mills; goat and sheep skins.
Selon—Olive oil.
Tarascon (16,000)—Oil; leather; wax; hat making.

CALVADOS—Poultry; cheese; woollens; quarries.
Bayeux (10,000)—Lace making.
Caen (45,000)—Shipping port; lace making; oolite stone quarrying; caps and stockings; skins; cider brewing; rape oil and oil-cake making.
Courseulles—Oyster breeding; shipping port.

Falaise—Tanning; cotton mills.
Honfleur—Shipping port; poultry and egg export; saw mills; oil, soap and paper mills; ship-building.
Isigny—Butter making.
Lisieux (20,000)—Flax and cotton spinning.
Pont l'Evêque—Lace making.
St. Remy—Iron ore mining.
Trouville—Shipping port; bathing place.
CANTAL—Lace; boots and shoes; cheese.
Aurillac—Boot and shoe trade.
CHARENTE—Iron; brandy; wine.
Alloue—Lead and zinc mining.
Angoulême (55,000)—Paper making; hemp spinning; stone ware; cork cutting; wine growing; chestnuts.
Barbèzieux—Brandy distilling.
Cognac (9000)—Brandy distilling.
Guillot—Iron works.
Ruelle—Iron works for naval department.
Ruffac—Brandy distilling.
Segonzac—Brandy distilling.
CHARENTE INFERIEURE—Brandy; salt.
Aunis—Marble quarrying.
Ile de Ré—Brandy distilling.
Ile d'Oleron—Brandy distilling; oyster breeding.
Maremnes—Oyster breeding; brandy distilling.
Rochefort (30,000)—Shipping port for brandy.
Rochelle (19,000)—Shipping port for iron ore, salt and brandy.
Tournay—Brandy shipping.
Saintes—Brandy distilling.
St. Jean d'Angely—Brandy distilling.
Tremblade—Oyster breeding.

CHER—Iron; textiles.
Bourges (32,000)—Government arsenal; silk, woollen and cotton goods; clothing trades.
Rozières—Iron foundries.

CORRÈZE—Cutlery; stoneware; wine.
Brives—Wine growing.
Lapleau-les-Mines—Collieries.
Meymac—Bismuth mining.
Tulle—Fire-arms factory; stoneware.

CÔTE D'OR—Wine; maize; iron.
Beaune (11,500)—Burgundy wine growing; quince sweetmeats.
Dijon (43,000)—Wine and mustard growing; gingerbread; lithographic stones.
Meursalt—Wine growing.
Nuits—Wine growing.
Pommard—Wine growing.
Volnay—Wine growing.

CÔTES DU NORD—Lead; textiles.
Loudéac—Flax spinning.
St. Brieuc—Shipping port; lead mining; woollen spinning.

CREUSE—Textiles; cheese; coal.
Ahun—Collieries.
Aubusson—Carpet weaving.

DORDOGNE—Wine; maize; iron.
Bergerac—Wine growing.
Perigeux—Wine growing; iron ore and foundries.
St. Emilion—Wine growing.
Sarlat—Wine growing.
Taponnet—Iron ore.

DOUBS—Watch making; iron.
Audincourt—Iron works.
Besançon (50,000)—Watch and clock making; iron works; carpet weaving; earthenware; brewing.
Grand Combe—Watch making.
Montbéliard—Watch and spectacle making.
Pontarlier—Absinthe distilling.
St. Hippolyte—Iron works.
Seloncourt—Watch and clock making.
DRÔME—Silk; wine.
Die—Wine growing.
Dieu-le-fit—Silk throwing.
Montélimart—Silk growing and manufacture; wine growing.
Nyons—Wine growing.
Valence—Silk throwing and winding; wine growing.
EURE—Beetroot; textiles; iron.
Bernay (6000)—Wool and cotton spinning; fustian and tape making.
Bonneville—Cheese making.
Etrépagny—Beetroot growing and sugar extraction.
Evreux (12,000)—Cotton, hosiery, linen and worsted factories.
Gisors—Cotton and woollen hosiery; chamois skins.
Louviers (12,000)—Woollen cloths and stuffs.
Nassandres—Beetroot growing and sugar extraction.
Pontaudemer—Cloth factories.
Rugles—Copper founding.
Vernon (12,000)—Cotton velvet making.
EURE ET LOIRE—
FINISTÈRE—Iron; lead; textiles; oyster culture; pottery.

Bélon—Oyster breeding.
Brest (66,000)—Arsenal and naval station; biscuit baking for navy; ropes and cordage; oyster breeding.
Huelgoat—Lead mining and silver extraction.
Landerneau—Flax spinning.
Morlaix (15,000)—Shipping port; flax and linen factories.
Plougastel—Strawberry growing.
Poullaouen—Lead mining; silver extraction.
Quimper—Stone ware and pottery.

GARD—Salt; coal and iron; silks; olives; wine; minerals.
Alais (20,500)—Silk throwing and cultivation; olive oil; grain market; wine growing.
Avelas—Iron ore working.
Bessèges—Collieries; iron and steel works.
Le Vigan—Wine growing.
Nîmes (63,000)—Shawls and embroidery; cloth factories; iron works; leather trade; fruits; wine growing.
St. Jean du Gard—Silk throwing; copper mining.
Servas—Asphalte quarrying.
Sumence—Silk hosiery.
Terre-Noire—Iron and steel works.
Uzès—Wine growing.

GARONNE—Maize; wine; minerals.
Bagneres de Luchon—Mineral waters and baths.
St. Béat—Marble quarrying.
Toulouse (125,000)—Button making; embroidery; tobacco; wine trade; truffles.

GERS—Wine.
Lectoure—Wine growing.
GIRONDE—Wine; iron; salt.
Arcachon (5000)—Bathing place; oyster breeding.
Bordeaux (195,000)—Shipping port; wine trade; liqueurs; fruits; earthenware; iron foundries; tanneries.
Chateau d'Yquem—Wine growing.
La Réole—Wine growing.
Labouheyre—Iron works.
Leoville—Wine growing.
Libourne (15,000)—Wine growing.
Medoc—Wine growing,
HAUTE LOIRE—Lace; minerals; silk; wine.
Brassac—Collieries.
Monastier—Silk throwing.
Paulhaguet—Lead, barytes and antimony mining.
Yssingeaux—Wine growing.
HÉRAULT—Silk; olives; wine; coal.
Bedarieux—Woollen cloth factories.
Béziers (31,000)—Glove and silk-stocking making; soap making; brandy distilling; Muscatel wine.
Cambons—Iron ore mining.
Cette—Wine growing; fish breeding.
Graissessac—Collieries.
La Tour—Zinc mining and works.
Lodève—Army clothing; serge making; wine growing.
Montpellier (57,000)—Silk trade; olives; oranges; wine growing.
St. Gervais—Coal mining.
St. Pons—Wine growing.
Villeveyrac—Mines of bauxite or hydrate of alumina.

ILE ET VILAINE—Salt; minerals; oyster breeding.
Cancale—Oyster breeding.
Fossemort—Oyster breeding.
Fougères—Boot and shoe making.
Rennes (53,000)—Leather dressing and tanning; glove making; bookbinding.
St. Malo (11,000)—Shipping port; tobacco; net making.
Vitré—Hosiery.

INDRE—Textiles; stone ware; wine.
Argenton—Linen clothing.
Chateauroux—Lithographic stone quarrying.
Issoudun—Tanning and parchment skin preparing.
Le Blanc—Wine growing.

INDRE ET LOIRE—Cutlery; wine; textiles.
Amboise (4500)—Steel hardwares and fire-arms.
Chateau Renault—Skin and leather trade.
Ribault—Powder mills.
Tours (43,000)—Cotton hosiery; printing; bookbinding.
Vouvray—Sparkling wine; plum growing.

ISÈRE—Silk; textiles; minerals; wine.
Allevard—Iron ore mining; mineral waters.
Chartreuse—Liqueur making.
Drac—Collieries.
Grenoble (43,000)—Paper making; glove making; cotton goods; liqueurs; wine growing.
La Mothe—Mineral waters; copper mining.
Pont du Claix—Nickel mining.
St. Marcellin—Wine growing.
St. Rambert—Silk throwing and silk waste trade.

Vienne (20,000)—Paper making; woollen cloth; iron foundries; lead mining; wine growing.

JURA—Maize; salt; watches; minerals; serpentine.

Dôle (16,000)—Collieries; iron works.

Lons-le-Saulnier—Watches and musical boxes.

Morez—Watch and spectacle making.

St. Claude—Fancy goods and toys.

Salins (7000)—Salt mining.

LANDES—Maize; minerals.

Buglose—Iron foundries.

Dax (9000)—Salt works; china ware; distilleries.

Ponteux-les-Forges—Iron works.

LOIRE ET CHER—Textiles; wine.

Blois (21,000)—Serge and cloth factories; glove making; hardware; glass making; plums; wine growing.

Vendôme—Wine growing.

LOIRE—Silk and lace; iron and hardwares; wine.

Ambieule—Syenite quarrying.

Chambon—Hardwares and cutlery.

Firminy—Hardwares and cutlery; steel works.

Montbrison—Wine growing.

Mt. Pilat—Granite quarries.

Rivé de Gier (15,000)—Collieries; glass making; railway carriage building.

Roanne—Cotton spinning; ladies' dresses; stone ware; wine growing.

St. Chamond—Silk dyeing and embroidery; iron works.

St. Etienne (111,000)—Silk weaving; velvets; ribbons; trimmings; embroidery; hardwares; files; wine growing.

LOIRE INFERIEURE—Salt; minerals.
Couëron—Copper smelting.
Nantes (120,000)—Shipping port; sugar refining; brandy export; preserved provisions; sardines; tanning; embroidery.
St. Nazaire—Shipping port for American steamers.
St. Nicolas—Emery works.
St. Nicolas de Redon—Iron works.
LOIRET—China ware; textiles; wine.
Amilly—Floss silk making.
Briare—Porcelain button making.
Gien—China and earthenware.
Orleans (49,000)—Corn market; wine and brandy trade; sugar trade; stocking and blanket making; vinegar; pins and needles.
LOT—Maize; minerals; wine; cork.
Barbaste—Cork manufacture.
Cahors—Millstones; wine growing.
Figeac—Wine growing.
Mézin—Cork manufacture.
Quercy-a-Albas—Manganese mining.
LOT ET GARONNE—Wine.
Agen—Wine growing; agricultural machinery.
Cuzorn—Iron ore mining and iron works.
Nèrac—Wine growing.
LOZÈRE—Minerals; wine.
Florac—Wine growing.
Vialas—Zinc and antimony mining.
MAINE ET LOIRE—Wine; textiles; coal.
Angers (58,000)—Flax, linen and embroidery trades; silk handkerchiefs; bell founding; sugar, oil and spirit trades; slate quarrying.

Montjean—Collieries.
Saumur—Wine trade.

MANCHE—Minerals; quarries; oyster breeding.
Cherbourg (35,000)—Naval station; slate quarrying.
Cotentin—Butter making and export.
Diélette—Copper mining.
Granville (17,000)—Oyster breeding; egg trade.
Regneville—Oyster breeding; marble quarrying.
St. Lo—Slate quarrying.
St. Vaast—Oyster breeding.
Villedieu—Tanning and parchment skin preparing.

MARNE—Wine; textiles.
Avize—Champagne growing.
Ay—Champagne growing.
Chalons-sur-Marne (17,000)—Champagne growing.
Epernay (12,000)—Champagne growing.
Fismes—Silk waste trade.
Rheims (70,000)—Worsted and woollen mills; embroidery; tartan shawls; champagne growing; gingerbread making.
Verzenay—Champagne growing.

HAUTE MARNE—Tanning; cutlery.
Chaumont-en-Bassigny—Tanning; glove making.
Eurville—Iron works.
Langres (10,000)—Cutlery; tanning.
Nogent-sur-Roi—Cutlery.
St. Dizier—Iron works.

MAYENNE—Textiles.
Laval (28,000)—Linen, cotton, thread and handkerchief manufactures.

MEURTHE ET MOSELLE—Salt; iron; glass; watches; textiles.

Baccarat—Glass making.
Champigneulles—Iron works.
Cirey—Mirror-glass making.
Croismare—Glass making.
Frouard—Iron works.
Gorcy—Iron works.
Lunéville (16,000)—Glove making; tanning; glass for mineral waters.
Nancy (54,000)—Cotton embroidery and spinning; tulle and lace making; china ware; preserved fruits.
Pont-a-Mousson—Iron works.
St. Laurent—Salt mines.
Tamaille—Iron and steel making.
Trois Fontaines—Watch glasses.
Toul (8000)—Earthenware.
Vic—Salt mining.

MEUSE—Textiles; minerals.
Ancerville—Iron ore working.
Bar-le-Duc (15,000)—Cotton spinning; corset making; preserved fruits.
Commerçy—Leather dressing and tanning; confectionery.
Stenay—Iron and steel works.
Verdun—Elastic web making.

MORBIHAN—Oyster breeding; minerals.
Brénéguay—Oyster breeding.
Hennebont—Iron works.
L'Orient (34,000)—Naval dockyard; sardine fishing; oyster breeding.
Vannes—Oyster breeding.
Villeder—Tin mining.

NIÈVRE—China clay.
Epau—Glass making.
Nevers (21,000)—China and earthenware.
St. Honoré—Mineral waters and baths.
NORD—Iron and coal; textiles; glass; beetroot.
Aniche—Collieries; iron works; glass works.
Anzin—Collieries; iron works.
Armentières—Cotton spinning.
Auby-les-Douai—Zinc mining.
Bethune—Collieries.
Busigny—Beetroot growing and sugar extraction.
Cambrai (18,000)—Linen, lace and thread; beetroot growing and sugar making.
Cateau—Stone ware; beetroot growing and sugar making.
Catillon—Beetroot growing.
Caudry—Tulle making; beetroot growing.
Comines—Cotton and woollen hosiery factories.
Denain—Collieries; iron works.
Douai (24,500)—Collieries; glass making; flax and cotton spinning; embroidery.
Dunkirk (34,500)—Flax and jute spinning; shipping port; fishing station.
Ecaillon—Beetroot growing and sugar extraction.
Fresnes—Glass making.
Hallévin—Tartan weaving.
Hautmont—Iron and steel works.
Jeumont—Glass making.
Jonchy—Tulle making.
Lens—Collieries and coal shipping.
Lille (155,000)—Flax, cotton and thread spinning; machine works; iron foundries; oil mills; sugar refining; bookbinding and printing; tanning.

Lourches—Glass making.
Maubeuge—Iron works.
Noyelle—Beetroot growing and sugar extraction.
Ohain—Hosiery making.
Roubaix (75,000)—Woollen and cotton spinning; stuffs; carpet weaving.
Solesme—Beetroot growing and sugar extraction.
Somain—Collieries.
Trelon—Glass making.
Turcoing (44,000)—Woollen and cotton spinning.
Valenciennes (25,000)—Collieries; flax and cotton spinning; hosiery; beetroot and linseed growing; sugar making; bookbinding.

OISE—Textiles.
Auneuil—Stone ware.
Beauvais (15,000)—Carpet weaving; embroidery; fan making.
Chantilly—Lace making.
Chaumont—Glove making.
Clermont—Embroidery.
Compiègne (12,000)—Wheat starch manufacture.
Gournay—Butter making.
Noyon—Linen, leather, hat and stocking trades.

ORNE—Textiles; hardwares.
Alençon (16,000)—Flax and linen factories; carpet and lace making; crystals, known as Alençon "diamonds."
Bagnolles de l'Orne—Mineral waters.
Belli—Boot and shoe trade.
Chanu—Hardwares.
Flers—Cotton spinning.
Laigle—Pin and needle making.
Tinchebray—Hardwares; nail making.

PAS DE CALAIS—Textiles; iron; beetroot.
Arras (25,000)—Hosiery and lace working; distilleries; oil mills; sugar refining; tanning; colza and beetroot growing.
Bailleul—Lace making.
Boulogne (40,000)—Shipping port; South-Eastern Railway route viâ Folkestone; fisheries; cement works; iron foundries; steel pen making; boot and shoe trade; sail cloth.
Calais—Shipping port; mail route viâ Dover; tulle and lace factories; paper making; fishing station.
Hardinghem—Collieries.
Havrincourt—Beetroot growing.
Hazebrouck—Lace making.
Lière—Collieries.
Marquise—Iron works.
St. Omer (22,000)—Linen clothing.

PUY DE DÔME—Lace making; minerals; wine.
Clermont Ferrand—Semolina starch making; wine growing.
La Bourbole—Mineral waters and baths.
Orcet—Antimony mining.
Pont-Gibeaud—Lead mining and smelting.
Royat—Mineral waters and baths.
St. Nectaire—Mineral waters and baths.
Thiers—Cutlery and hardwares.
Velay—Trachyte quarrying.

PYRÉNÉES (BASSES)—Wine; minerals.
Arre—Copper, lead and zinc mining.
Aspe—Alabaster quarrying.
Barèges—Mineral waters and baths,

Bayonne (25,500)—Shipping port; hams; chocolate; wines.
Bidassoa—Iron ore mining.
Eauxbonnes—Mineral waters.
Pau—Baths; zinc and iron ore mining.
Salies-de-Bearn—Salt works.

PYRÉNÉES (HAUTES)—Mineral waters.
Bagnes-de-Bigorres (9000)—Baths and mineral waters.
Cauterets—Mineral waters.
Luz—"Crêpe de Barèges" manufacture.
St. Sauvern—Mineral waters.
Tarbes—Government horse-breeding stud.

PYRÉNÉES (ORIENTALES)—Minerals; wine.
Céret—Wine.
Fillol—Iron ore mining.
Mt. Canigou—Iron ore mining.
Perpignan—Iron ore mining.
Prades—Iron ore; wine growing.

RHÔNE—Wine; textiles.
Amplepuis—Cotton spinning.
Grigny—China ware; stained glass.
Lyons (330,000)—Silk dyeing and weaving; satins; velvets; gold and silver embroidery; goldsmiths' work; tanning.
Tarare—White muslins; cotton spinning; silk weaving.
Villefranche (14,000)—Nankin manufactory; wine growing.

HAUTE SAÔNE—Minerals; iron works.
Beaucourt—Hardwares; nuts, bolts and screw making.
Givors (10,000)—Iron works; pottery; bottle glass making; silk mills; tanneries.

Loiré—Watch glass making.
Ronchamp—Collieries.
Vesoul (8000)—Brass founding.

SAÔNE ET LOIRE—Wine; iron and steel.
Autun (12,000)—Collieries; Chablis wine growing.
Blanzy—Collieries; glass bottle making.
Chalons-sur-Saône (20,000)—Flour and seed mills; beetroot sugar extraction; breweries; ship building; wine growing.
Charolles—Collieries.
Creusot (25,000)—Collieries; iron and steel works.
Epinac—Collieries; glass making.
Macon (18,000)—Burgundy wine growing; watch and jewellery trade.
Mazenay—Iron and steel works.
Monceau-les-Mines—Glass works.

SARTHE—Textiles.
Fupille—Boot and shoe trade.
Le Mans (46,000)—Flax, linen and hemp spinning.
Peneigue—Boot and shoe trade.

SAVOIE—Textiles; wine; iron; minerals.
Aix-les-Bains—Baths and mineral waters.
Chambéry (18,000)—Silk gauze making; wine growing.
Epierre—Spathose iron ore mines.
St. Michel de Maurienne—Anthracite coal; alabaster.

SAVOIE (HAUTE)—Watchmaking.
Cluses—Watch and clock making.

SEINE—
Paris (1,986,748)—Jewellery; gold and silver smiths' work; clothing; fans and ornamental work; bronzing; printing and bookbinding; glass making; articles *de luxe.*

Auteuil—Lettuce growing.
Aubervilliers—Glass making.
Choisy-le-Roi—China and earthenware; chemical works.
Colombes—Petroleum works.
Montmartre—Gypsum quarrying.
Pantin—Glass works; asparagus growing.
Puteaux—Tartan weaving; peach growing.
St. Denis (22,000)—Tartan weaving; glass works; nickel and cobalt smelting.
St. Joseph de Bourguet—Glass making.
Sceaux—China ware; apricot growing.
Vincennes—Market gardening.

SEINE ET MARNE—Minerals.
Clichy—Gypsum quarrying; glass works.
Ferté-sous-Jouarre—Millstone quarrying and preparing.
Fontainebleau (10,000)—Paving stone quarrying.
Jouy-sur-Morin—Paper making.
Lagny—Alabaster quarrying.
Meaux (12,000)—Agricultural machinery works.
Noisiel—Chocolate factory.

SEINE ET OISE—Agricultural; china ware.
Argenteuil—Raspberry growing; gypsum quarries.
Étampes—Paving stones; flour mills; tanneries; carriage building.
Ferté d'Alais—Floss silk making.
Houdan—Paving stone quarrying.
Molières—Millstone quarrying.
Montmorency—Gypsum quarrying.
Poissy—Cattle fairs; peach growing.
Sèvres—Porcelain and china ware.
Vienne-en-Arthies—Pin making.

SEINE INFERIEURE—Textiles; oyster breeding.
Dieppe (21,000)—Steam-ship port for the London, Brighton and South-coast Railway viâ Newhaven; paper making; patent fuel; brick and tile making; watch and clock making; ivory carving; oyster breeding.
Elbœuf—Cotton and woollen factories; dyeing.
Fécamp—Shipping port; cotton spinning; fishing-net making; liqueur making.
Harfleur—Exportation of eggs.
Havre (103,000)—Shipping port; sugar and rice mills; engine factories; ship building.
Oissel—Cotton factories.
Rouen (150,000)—Shipping port; cotton, woollen and elastic web factories; velvets; hosiery; book-binding.
St. Nicolas d'Aliermont—Watch making.
St. Saens—Skin and leather trade.
St. Valery—Bathing place.
Tréport—Bathing place.
Yvetôt (9000)—Cotton, linen and bed-tick factories.

DEUX SÈVRES—Glove making; grain growing; wine.
Melle—Wine growing.
Niort—Beaver glove trade; chamois skins; grain and wine growing.

SOMME—Textiles; beetroot.
Abancourt—Cotton spinning.
Abbeville (20,000)—Flax, linen and cotton spinning; hemp, cordage and sail cloth; carpet making; carriage building.

Amiens (63,000)—Flax, linen and cotton spinning; velvet and carpet making; chemical works; skin trade.

Caux—Cotton spinning.

Rosières—Cotton spinning; beetroot growing.

Querrieu—Lead mining.

TARN—Textiles; minerals.

Albi (15,000)—Corn market.

Carmeaux—Collieries.

Vabre—Woollen serge making.

TARN ET GARONNE—Silk and straw plait; wine; iron ores.

Moissac—Wine growing.

Montauban (27,000)—Silk throwing; woollen serges; wine growing.

VAR—Wine; silk; olives; cork.

Bozon—Collieries and mineral slates.

Collabrières—Cork manufacture.

Draguignan—Wine growing.

Gard-Freinet—Cork manufacture.

Hyères (5000)—Olive and orange growing.

Toulon (69,000)—Naval dockyard; timber yards; ship building; iron foundries; wine trade.

VAUCLUSE—Wine; silk; madder.

Avignon (38,000)—Silk cultivation and throwing; woollen and cotton spinning; madder growing; cannon and type foundries; tanning; wine growing.

Carpentras—Wine growing.

Montmênil—Mineral waters.

Orange—Wine growing.

VENDÉE—Salt; oyster breeding; grain growing.
Fontenay—Grain growing.
Luçon—Grain growing.
Sables d'Olonne—Oyster breeding.
VIENNE—Minerals; cutlery; wine.
Chatelhérault (14,000)—Cutlery; arms and sword factory.
Civray—Wine growing.
Poitiers—Wine growing.
VIENNE (HAUTE)—China clay; porcelain.
Limoges (56,000)—Pottery and china works; book-binding.
St. Junien—Glove making.
VOSGES—Textiles; minerals.
Chippal—Marble quarrying.
Clairey—Glass works.
Colmar—Granite quarrying.
Darney—Boot and shoe trade; iron ore working.
Épinal—Cotton spinning; wheat starch making.
Gerardmer—Cheese making.
Mirecourt—Lace and embroidery making; collieries.
Planches-les-Mines—Syenite quarrying.
Plombières—Mineral waters.
Remiremont—Cotton spinning.
St. Dié—Hosiery and cotton spinning.
Xertigny—Iron works.
YONNE—Wine; leather.
Auxerre (15,000)—Wine growing; musical strings making.
Joigny—Wine trade.
Pourrain—Ochre working.
Sens (12,000)—Tanning and leather trades.

CORSICA—Minerals; olive oil.
Ajaccio—Shipping port.
Bastia—Shipping port; olive oil; fishery; marble quarrying.
Bonifaccio—Shipping port.
Luri—Antimony mining.
Ponte Leccia—Copper mining.

Equivalents (in round numbers) of French Money, Weights and Measures, as ordinarily met with.

·05 centimes	=	one halfpenny.
·10 „	=	one penny.
100 „ or 1 franc	=	nine pence.
25 „	=	one pound sterling.
100 „	=	four pounds „
1000 „	=	forty pounds „
1 kilogramme (or kilo)	=	2.2 lbs.
10 „	=	22 „
1015 „	=	one ton.
1 kilomètre	=	⅝ of a mile.
5 „	=	3 miles.
8 „	=	5 „
1 mètre	=	$1\frac{3}{10}$ yard.
11 „	=	22 „
1 hectare	=	2.471 (or nearly 2½) acres.
1 hectolitre	=	22 gallons.

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